

**WEST**

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L1: Entry 15 of 35

File: USPT

Nov 26, 2002

DOCUMENT-IDENTIFIER: US 6485947 B1

TITLE: Production of lactate using crabtree negative organisms in varying culture conditions

**Brief Summary Text (8):**

It is important to note that a critical aspect relating to the ability to produce a desired organic product for commercial purposes can be the specific productivity at which that desired organic product is produced. For example, providing a high specific productivity using the methods and materials as described herein can allow a microorganism to generate the energy needed for cell maintenance when exposed to culture conditions such as low pH and high temperature. This required energy can be generated via a fermentation pathway under substantially anaerobic conditions, rather than relying on the generation of energy via the respiratory pathway. Obtaining energy via a fermentation pathway is particularly advantageous when producing an organic product that does not require the respiratory pathway since essentially all of the provided carbon source can be used to produce the desired organic product.

**Brief Summary Text (23):**

Cells made by these methods can produce at least about 60 grams of the organic product for every 100 grams of glucose consumed when the culturing step is optimal for production of the organic product. The culture medium, which can be liquid, can include an inhibitor of cellular respiration, such as antimycin A, cyanide, or azide. The culturing step can include growing the cells under aerobic growth conditions followed by contacting said cells with an inhibitor of cellular respiration.

**Brief Summary Text (24):**

In an alternative embodiment, the culturing step includes incubating the cells under anaerobic culture conditions. In a further alternative embodiment, the culturing step includes growing the cells under aerobic growth conditions followed by incubating the cells under anaerobic culture conditions. The culturing step can also include culturing the cells at a temperature greater than about 35.degree. C.

**Drawing Description Text (19):**

FIGS. 13A, B and C show three graphs plotting (A) biomass production; (B) glucose consumption; and (C) ethanol production of *S. uvarum* and *K. marxianus* when cultured on mineral medium with 2% glucose under anaerobic conditions.

**Detailed Description Text (4):**

For the purpose of this invention, an organic product is any compound containing a carbon atom. For example, carboxylates (e.g., lactate, acrylate, citrate, isocitrate, alpha.-ketoglutarate, succinate, fumarate, malate, oxaloacetate), carbohydrates (e.g., D-xylose), alditols (e.g., xylitol, arabitol, ribitol), amino acids (e.g., glycine, tryptophan, glutamate), lipids, esters, vitamins (e.g., L-ascorbate), polyols (e.g., glycerol, 1,3-propanediol,

erythritol), aldehydes, alkenes, alkynes, and ketones are organic products. Thus, an organic product can contain one, two, three, four, five, six, seven, eight, nine, ten or more carbon atoms. In addition, organic products can have a molecular weight that is less than about 1,000 (e.g., less than about 900, 800, 700, 600, 500, 400, 300, 200, or 100). For example, D-xylose (C.sub.5 H.sub.10 O.sub.5) is an organic product that has a molecular weight of 150. Further, organic products can be fermentation products. The term "fermentation product" as used herein refers to any organic compound that is produced by a fermentation process. In general terms, a fermentation process involves the anaerobic enzymatic conversion of organic compounds such as carbohydrates to compounds such as ethyl alcohol, resulting in energy in the form of adenosine triphosphate (ATP). Thus, fermentation differs from cellular respiration in that organic products rather than molecular oxygen are used as electron acceptors. Examples of fermentation products include, without limitation, acetate, ethanol, butyrate, and lactate.

#### Detailed Description Text (25):

Any type of yeast can contain an exogenous nucleic acid molecule that encodes a polypeptide that promotes accumulation of acetyl-CoA in the cytoplasm of the cell. For example, a yeast cell having a crabtree-negative or crabtree-positive phenotype can contain an exogenous nucleic acid molecule that encodes a polypeptide that promotes accumulation of acetyl-CoA in the cytoplasm of the cell. Typically, such yeast cells can be identified by (1) manipulating the cell that contains the exogenous nucleic acid molecule such that it lacks pyruvate decarboxylase or alcohol dehydrogenase activity, (2) determining the growth characteristics of the cell while culturing the cell in the presence of titrating amounts of a respiratory inhibitor (e.g., antimycin A, cyanide, or azide), and (3) comparing those growth characteristics to those observed for a comparable yeast cell that does not contain the exogenous nucleic acid molecule, yet that also was manipulated to lack pyruvate decarboxylase or alcohol dehydrogenase activity. Yeast cells determined to have more favorable growth characteristics due to the presence of the exogenous nucleic acid molecule by such a comparison are considered to contain an exogenous nucleic acid molecule that encodes a polypeptide that promotes accumulation of acetyl-CoA in the cytoplasm of the cell.

#### Detailed Description Text (51):

In general, culture medium containing an inhibitor of cellular respiration (e.g., antimycin A, cyanide, and azide) can reduce cellular respiration, while the absence of such inhibitors can promote cellular respiration. Likewise, anaerobic culture conditions can reduce cellular respiration, while aerobic culture conditions can promote cellular respiration. An aerobic condition is any condition where oxygen is introduced or occurs naturally and serves as a substrate for the respiratory pathway. Generally, the term "aerobic" refers to a culture condition in which the culture media is maintained under an air flow of at least 0.1 VVM (volume air/volume liquid/minute) (e.g., greater than 0.2, 0.3, 0.4, 0.5, 1.0, 1.5 or 2.0 VVM). If a gas other than air is used then the nominal VVM is adjusted to an air equivalent based on oxygen content of the gas. Alternately, "aerobic" can be defined as a culture media which has a dissolved oxygen content of at least 2 percent (e.g., at least 5, 10, 20, 30, 40, 50, 60, 75 or 80 percent) relative to the amount present at saturated conditions with air at atmospheric pressure.

#### Detailed Description Text (52):

An anaerobic condition is any condition where oxygen is purposely or naturally made essentially unavailable to the respiratory pathway, leading to, for example, the production of a reduced product such as ethanol. Generally, a condition where culture medium has a dissolved oxygen (DO) content less than about 2.0% (e.g., less than about 1.5, 1.0, or 0.5%, or equal to about 0%) is considered an anaerobic condition. Likewise, a condition having a VVM (volume air/volume liquid/minute) less than about 0.1 (e.g., less than about 0.05, or equal to about 0) is considered an anaerobic condition. Typically, the term "air" as used herein with respect to VVM refers to air as it exists in the atmosphere. Other culture conditions that can influence cellular respiration include, without limitation, pH, temperature, and the presence of particular carbon sources (e.g., glucose). It is important to note that some culture media and/or culture conditions that promote cellular

respiration within one species of yeast can reduce cellular respiration within another species. For example, the presence of glucose within culture medium reduces cellular respiration in yeast cells having a crabtree-positive phenotype while having little or no effect on cellular respiration in yeast cells having a crabtree-negative phenotype.

#### Detailed Description Text (53):

Directed manipulation of culture conditions during a commercial production can be an important step in achieving optimal levels of a desired organic product as described herein. Typically, a yeast cell within the scope of the invention is grown under culture conditions that promote cellular respiration to produce a significant cell density. For example, yeast cells can be placed into a culture vessel, and given an abundance of glucose and oxygen. Typically, under conditions that promote cellular respiration, the doubling time for the microorganisms provided herein is less than about 10 hours (e.g., less than about 8, 5, or 3 hours). Once the cells reach a significant density, the culture conditions can be switched to conditions that reduce cellular respiration such that an organic product not requiring cellular respiration is produced. For example, the yeast cells can be transferred to a culture vessel and given an abundance of glucose, but no oxygen. In this case, directly manipulating the culture conditions such that they are switched from aerobic to anaerobic can produce optimal levels of a desired organic product. Alternatively, in some cases, the cells can be cultured solely under conditions that promote cellular respiration such that an organic product requiring cellular respiration is produced. It is noted that the cell mass within the production vessel typically is greater than about 2 g/L (e.g., greater than about 4, 6, or 8 g/L).

#### Detailed Description Text (55):

In one mode of operation, it may be desired to fill a large fermentation vessel with a culture medium including all of the nutrients required and all of the carbohydrate, sufficient both for biomass production and for the production of the desired product. The vessel can be operated under conditions such that biomass production is promoted initially, for example, by providing aerobic conditions, and then switched to anaerobic conditions for the production of the desired product.

#### Detailed Description Text (56):

In an alternate mode of operation, a smaller vessel is used for biomass production, with a high level of nutrients and sufficient carbohydrate to produce, for example, about 100 g/l biomass. The contents of this vessel can then be transferred to a larger vessel, containing a second culture media which contains less nutrients, for example, only glucose as a carbon source or other carbohydrate carbon source in water. This vessel may be operate under anaerobic conditions for the production of the desired organic product. Biomass growth is reduced due to the reduced level of nutrients and the anaerobic conditions.

#### Detailed Description Text (57):

In a preferred embodiment, the nutrient media is kept to only the required materials in order to simplify recovery of the desired product. Use of aerobic growth can allow a simplified media to be used, relative to that needed if growth under anaerobic conditions was needed. Many of the yeast described herein can be grown, under aerobic conditions, on a media consisting only of sugar, an inorganic nitrogen source, trace minerals, and some vitamins.

#### Detailed Description Text (62):

For example, the culture medium can be manipulated to have a dissolved oxygen content that creates an anaerobic environment throughout the tank, or to contain an inhibitor of cellular respiration. In addition, the culture medium can be manipulated such that a particular pH value (e.g., an acidic, neutral, or basic pH value) is maintained. Alternatively, the pH of the culture can be adjusted periodically without maintaining any particular pH value. Typically, when producing an organic acid, the pH value of the culture medium is maintained above at least about 1.5 (e.g., at least about 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, or 7.0). Further, as the

microorganism catabolizes the provided carbon sources, the temperature within the tank will increase. Thus, the culture medium can be manipulated such that a particular temperature is maintained. Alternatively, the temperature of the culture medium can be adjusted periodically without maintaining any particular temperature. Typically, a temperature less than about 35.degree. C. (e.g., less than about 34, 33, 32, 31, or 30.degree. C.) is maintained when using heat sensitive microorganisms, while a temperature less than about 45.degree. C. (e.g., less than about 44, 43, 42, 41, 40, 39, 38, 37, 36, or 35.degree. C.) is maintained when using heat insensitive microorganisms. It is noted that biomass can be produced during this organic product production phase. In addition, the culture conditions within the second tank can be switched from those that promote product production to those that promote biomass production, and vice versa, one or more times. For example, the culture conditions within the second tank can be anaerobic the majority of the time with brief pulses of dissolved oxygen such that aerobic conditions periodically exist.

#### Detailed Description Text (63):

In another method, the anaerobic culture conditions may be modified to increase the metabolic energy of the cultured microorganism, for example, by the addition of a terminal electron acceptor. As used herein, the term "metabolic energy" refers to the energy (in terms of ATP) derived by the organism from an energy source (such as a carbon source). Under some conditions, the amount of metabolic energy obtained by the organism from the metabolism of a carbon source is greater than the amount of energy obtained from the same carbon source under different conditions.

#### Detailed Description Text (66):

Generally, under anaerobic conditions, ATP (the "cellular currency" for energy) is produced by substrate level phosphorylation. In substrate level phosphorylation, energy is released from chemical bonds and is stored mainly in the form of ATP.

#### Detailed Description Text (76):

Thus, it may be desirable to expose the microorganisms within an anaerobic culture medium to brief pulses of dissolved oxygen. Preferably, the "brief pulse of dissolved oxygen" results in the culture medium having a dissolved oxygen concentration of no greater than 0.5 percent, preferably between about 0.1 and 0.5 percent. Alternately, the growth rate or cellular maintenance of the microorganisms during anaerobic fermentation can be increased by the addition of other terminal electron acceptors such as nitrate or fumarate. The oxygen is added at a level just sufficient to increase the metabolic energy of the microorganism while maintaining productivity at a desired level. Care must be used to avoid excessive yield loss. This technique may also be used to help consume residual sugars and thereby to further simplify recovery processes.

#### Detailed Description Text (80):

A significant advantage of the present invention is that the preferred microorganisms, especially when grown under aerobic conditions, can utilize minimal media. The anaerobic production typically will not require additional nutrients, so the final product can be isolated from a relatively clean fermentation broth using any of a variety of separation techniques. Liquid-liquid extraction is a well known technique for the separation of organic acids from fermentation broths, and results in considerable purification. With the present invention it is believed that simpler, less costly, less energy-consuming systems may also be useful.

#### Detailed Description Text (81):

In one embodiment, the present invention uses genetically modified yeast having a crabtree-negative phenotype in a train-type process that induces a "switch" in the metabolic pathway after a critical cell density has been reached and at which time it is desired to dramatically increase the specific productivity of the desired organic product. A typical method for inducing the metabolic pathway switch is by moving the biomass from a highly aerated vessel to a substantially anaerobic vessel, causing oxygen starvation. It is noted that a common carbohydrate (e.g., glucose or xylose) can be used as the carbon source during both the growth phase



and the production phase. The use of a genetically modified yeast cell having a crabtree-negative phenotype can be critical to the success of this embodiment. In addition, the specific productivity of the desired organic product can be critical to success. The term "specific productivity" as used herein reflects the amount of product produced and is represented as the number of grams of organic product produced per gram of biomass (dry weight) per hour, i.e., g/(g\*hour). Typically, the specific productivity for organic products such as lactate and acrylate is greater than about 0.1 g/(g\*hour), for example, greater than about 0.2 g/(g\*hour), or greater than about 0.5 g/(g\*hour). By providing a high specific productivity as described herein, the energy required for cell maintenance may be obtained via the fermentative product pathway under substantially anaerobic conditions, rather than relying on aeration to generate high amounts of energy via the respiratory pathway. It is noted that substantially anaerobic vessels are aerated at a rate of less than about 0.1 VVM. Under certain production situations, no aeration will be used. In addition, the yield (i.e., g organic product/g carbon source consumed) in this embodiment typically is greater than about 70 wt %, and is produced without the addition of carbon sources such as ethanol and acetate. In some cases, in order to achieve the specific productivity required to generate the required energy for cell maintenance, it may be necessary to enhance the pathway from glucose to pyruvate in addition to providing the necessary enzymes to produce the desired product.

#### Detailed Description Text (82):

In another embodiment, the train-type process can be designed such that only the highly aerated growth vessel is equipped with sterilization capability. The anaerobic production vessel is typically operated at temperatures greater than about 35.degree. C. (e.g., greater than about 36, 37, 38, 39, 40, 41, 42, 43, 44, or 45.degree. C.). Few wild-type yeast will be able to survive and compete with the genetically modified yeast at such temperatures as the pH drops during product production, especially since they will not have an enhanced fermentation pathway that can generate energy for cell maintenance. In addition, the yeast can be engineered to contain "killer plasmids" as described herein, which can prevent yeast from other species from surviving.

#### Detailed Description Text (95):

1) A genomic cDNA library from one of these organisms is cloned into an standard E. coli expression vector such as pUC19 using standard techniques (Sambrook et al., (1989) Molecular cloning: a laboratory manual, 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y.). An E. coli (ldh pfl) mutant strain NZN111 (Bunch et al., (1997) "The ldhA gene encoding the fermentative lactate dehydrogenase of Escherichia coli," Microbiology, 143:187-95) is transformed with this library and the cells are grown under anaerobic conditions in M9 medium supplemented with casamino acid. Any E. coli that grows under these conditions encodes either a lactate dehydrogenase or is a revertant in ldh or pfl. Positives (colonies that form under the anaerobic growth conditions) are screened for LDH activity using a colorimetric assay of lactic-acid specific soft-agar overlay (LASSO) that is capable of differentiating between (L)-LDH and (D)-LDH (Witte et al. (J. Basic Microbiol. 29:707-716 (1989)). Plasmid DNA from clones suspected of expressing L-lactate dehydrogenase are then isolated and sequenced.

#### Detailed Description Text (96):

2) K. thermotolerans ATCC 52709, T. reesei ATCC 13631 and Torulaspora pretoriensis ATCC 36245 are all eukaryotes that produce L-lactic acid when cultured under anaerobic conditions (Witte et al. (J. Basic Microbiol. 29:707-716 (1989)). Thus, according to this method, at least one of these strains is grown under anaerobic conditions to induce lactate dehydrogenase enzyme activity. A cell free extracts is then obtained using standard methods and subjected to known protein purification strategies to isolate the lactate dehydrogenase enzyme. Methods for purifying lactate dehydrogenase are known (Kelly et al., (1978) "Affinity chromatography of bacterial lactate dehydrogenases," Biochem J, 171(3):543-7). After the protein is purified, it is partially cleaved and sequenced to determine the amino acid sequence. This amino acid sequence is then used to design degenerate primers to isolate the gene encoding lactate dehydrogenase from the genomic DNA.

Detailed Description Text (141):

The isolated clones containing the coding sequence for these enzymes is introduced into the yeast cells described in Example 6, which contain lactate dehydrogenase and lack pyruvate decarboxylase activity. Selection of recombinant yeast cells that contain the introduced nucleic acid is performed using G418 (300 g/L). Once isolated, the recombinant yeast cells are grown aerobically on glucose, and then switched to anaerobic conditions. The broth then is collected and assayed to acrylate using standard HPLC methods as described by Danner et al. (Biotechnological production of acrylic acid from biomass, In: Applied Biochemistry and Biotechnology, Vol. 70-72 (1998)).

Detailed Description Text (150):

PCR primers are designed based on the *S. cerevisiae* aconitase (ACO1, Genbank accession number M33131) nucleic acid sequence. These primers are used to clone the aconitase encoding nucleic acid from a *Kluyveromyces*, *Yamadazyma*, or *Hansenula* species. Once sequenced, linear constructs are made as described in Example 5, and used to disrupt the aconitase encoding nucleic acid within yeast cells. The selection marker used is the antibiotic G418 instead of lactate production as described in Example 5. The nucleic acid providing resistance to antibiotic G418 is the neomycin/kanamycin gene. This gene is obtained from the pPIC9K vector (In Vitrogen), and inserted into the pHES vector. Yeast cells are transformed with PCR generated linear fragments that are engineered to have ends homologous to the ACO1 as described above. The linear fragment is designed to encode the G418 resistance gene. Only cells that have integrated the linear fragment in the location of the aconitase encoding nucleic acid are resistant to the antibiotic. Those cells are analyzed for the appropriate integration using PCR. The yeast cells obtained by this method have a partially functional TCA cycle, and thus can overproduce citrate. The citrate is transported across the mitochondrial membrane and into the broth. In addition, these yeast cells are given an exogenous nucleic acid molecule that encodes an enzyme such as ATP-citrate lyase such that they can catalyze the conversion of accumulated citrate into oxaloacetate (see Example 13).

Detailed Description Text (161):

Each variant is grown in a vessel under aerobic conditions with an air flow of 1.5 VVM and a dissolved oxygen content of 30% to reach a cell density of about 60 g/L, dry basis. Once the density is sufficient, the air flow is turned off, and the conditions within the vessel are switched to anaerobic conditions. No base is added. The variants with the highest specific productivity during the anaerobic phase can be found not only to produce lactic acid faster, but also to achieve a higher concentration at a lower pH, than the variants with lower specific productivity. Product yield on glucose during the production phase can exceed 90%.

Detailed Description Text (166):

The contents of the final vessel, with a cell density of 100 grams of cells/L, dry basis, are transferred to a recently steamed production vessel having a volume of 300,000 L. Optionally, additional cells obtained from the filtration of a previous production process are added. The cell density in the production vessel is 6 grams of cells/L, dry basis. Glucose is added to a level of 80 g/L. The conditions within the vessel are anaerobic with the temperature being 42.degree. C. for a period of 25 hours. The specific productivity is greater than 0.5 grams lactate/(gram biomass\*hour) until near the end of the process, at which time the productivity begins to drop. Once productivity begins to drop, the cells are removed and saved for reuse. The final lactate concentration can be 75 g/L with the pH being 2.8. After biomass removal, the solution is concentrated by evaporation to a concentration of 50% lactate. The free acid (about 86% of total lactate) is extracted by liquid extraction into an organic and back extracted at a higher temperature into water. The raffinate containing the lactate salt is either cleaned and recycled as a buffer in the growth vessel, or acidified with, for example, sulfuric acid and purified.

Detailed Description Text (169):

A crabtree negative (*K. marxianus*) and a crabtree positive (*S. uvarum*) organism were each grown in aerobic and anaerobic batch fermenters. Batch cultivation was performed at 30.degree. C. in laboratory fermenters with a working volume of 1.5 L. The pH was maintained at 5.0.+-.0.1 by automated addition of 2 mol.multidot.L.sup.-1 potassium hydroxide (KOH). The fermentor was flushed with air (aerobic cultures) or nitrogen gas (anaerobic cultures) at a flow rate of 0.8 1.multidot.min.sup.-1 and stirred at 800 rpm. The dissolved-oxygen concentration was continuously monitored with an oxygen electrode (Ingold, type 34 100 3002). In the aerobic cultures, the dissolved oxygen concentration was maintained above 60%. 10 ml samples were withdrawn at appropriate intervals for determination of dry weight and metabolite concentrations. Tween-80 and ergosterol were added to anaerobic cultures to supply the compounds required for fatty acid synthesis.

#### Detailed Description Text (173):

In anaerobic batch cultures, the specific growth rate and biomass yield for both strains was very low compared to that found under aerobic conditions (Table 3, FIGS. 1 and 2). For the *Kluyveromyces* and the *Saccharomyces* strains, the biomass yield was 0.07 and 0.09 g/g, respectively. Both the strains perform equally well with respect to the specific rate of alcoholic fermentation under anaerobic conditions. This was confirmed using *CO.sub.2* production data.

#### Detailed Description Text (174):

Generally, this Example demonstrates that aerobic production of biomass is much faster than anaerobic, and that yield of biomass under aerobic conditions is higher for crabtree negative organisms (because, in crabtree positive organisms, some alcoholic fermentation takes place, using up glucose). This Example also demonstrates that the fermentation product (ethanol, in this case) is produced at the same rate for both crabtree positive and negative organisms under anaerobic conditions. Thus, an aerobic growth stage provides the high biomass yield, and a subsequent anaerobic fermentation stage channels metabolic energy into product formation (rather than more growth). Overall, a process in which production is separated from growth provides greater process flexibility and better control over the overall process yield.

#### Detailed Description Text (177):

The yeast *Kluyveromyces thermotolerans* (*K. thermotolerans*) is a natural producer of L-lactic acid (Kurtzman and Fell, (1998) "The Yeasts, A Taxonomic Study" pp. 240-241; Elsevier Science B. V.; Amsterdam, The Netherlands). *K. thermotolerans* has a naturally occurring lactate dehydrogenase (ldh) gene which allows for the production of L-lactic acid. The amount of lactic acid produced under anaerobic conditions is approximately 4% g/g of glucose utilized, while the remainder of the glucose is essentially converted into ethanol (42.5% g/g glucose consumed), glycerol (3% g/g of glucose consumed) and acetate (0.3 g/g %of glucose consumed).

#### Detailed Description Paragraph Table (3):

TABLE 3 Maximum specific growth rate, specific rates ( $q$ , mmol[g biomass].sup.-1 h.sup.-1) of ethanol production and glucose consumption, the biomass yield (g/g), product yield (mmol/mmol), and carbon recovery (in %; only calculated for anaerobic cultures) during exponential growth in batch cultures of *Saccharomyces uvarum* and *Kluyveromyces marxianus* on mineral medium containing 2% (wt/vol) glucose. *K. marxianus* *S. uvarum*  
aerobic anaerobic aerobic anaerobic .mu..sub.max (h.sup.-1) 0.38 0.09 0.28 0.12  $q_{\text{sub.glucose}}$  5.8 7.6 10.9 7.2  
 $q_{\text{sub.ethanol}}$  0 9.9 20 9.7  $Y_{\text{sub.p/s}}$  0 1.30 1.83 1.35  $Y_{\text{sub.x/s}}$  0.38 0.07 0.14 0.09 C-rec -- 84.6 -- 73.3

#### Detailed Description Paragraph Table (4):

TABLE 4 Results of anaerobic fermentation using *K. thermotolerans*, starting with 100 g/l glucose in YPAD media (rich media). Lactic Time glucose lactic acetate glycerol ethanol YSI 0 92.937 0 0 0 0.025 0.06 12 79.603 0.476 0 0.41 3.345 0.6 36 38.618 2.135 0 2.011 25.642 2.08 54 11.662 3.525 0.2 2.789 41.522 3.34 78 1.539 4.322 0.209 3.213 42.5 3.88 98 0.286 4.365 0.307 3.24 42.5 3.74

Other Reference Publication (34):

Shi, N. et al., "Anaerobic growth and improved fermentation of *Pichia stipitis* bearing a URA1 gene from *Saccharomyces cerevisiae*", Appl. Microbiol. Biotechnol., vol. 50, pp. 339-345 (1998).

**CLAIMS:**

3. The method of claim 2 wherein the second set of culture conditions comprise anaerobic conditions.

**WEST**

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L11: Entry 43 of 62

File: USPT

Nov 12, 1996

DOCUMENT-IDENTIFIER: US 5573947 A

TITLE: Selective medium containing lithium and a polyol or antibiotic for counting propionic bacteria

Abstract Text (1):

A medium is prepared for counting propionic bacteria under anaerobic conditions. The medium contains a complex culture medium composed in particular of a casein hydrolysate and a yeast extract, supplemented with at least one lithium compound, such as lithium lactate, and at least one polyol and/or one or more antibiotics. The counting of the bacteria in a biological sample is carried out by incubation of a sample or decimal dilutions of it in a counting medium.

Brief Summary Text (12):

The milk propionic bacteria are known to be resistant to the majority of the sulfamides, to some penicillins of the penicillin-M group, such as oxacillin or cloxacillin, as well as to nalidixic acid (Reddy et al; 1972, J. Dairy Sci 55, 665; 1973, J. Milk Food Technol. 30, 564-569; 1973, Antimicrob. Ag. Chemother. 4, 254-258). The same authors have shown that the strains of Propionibacterium tested also showed moderate resistance to polypeptides (colistin and polymyxin B) and to antibiotics of the aminoglycoside group (neomycin and kanamycin). The propionic bacteria are, on the other hand, sensitive to the majority of the  $\beta$ -lactams (penicillin G and A, cephalosporins) as well as to the tetracyclines (tetracycline), and to the macrolides, such as erythromycin and to chloramphenicol (Reddy et al., J. Milk Food Technol. 30, 564-569; Nord and Olsson-Liljequist, 1985, J. Antimicrob. Chemother., 15, suppl. C, 183-188). As far as the cutaneous strains of Propionibacterium are concerned, the use of antibiotics from the macrolide (erythromycin), lincosamide (lincomycin) and tetracycline groups (tetracycline) in acne treatment has led to the emergence of resistant strains, which has necessitated the use of other antibiotics (Eady et al., 1989, J. Antimicrob. Chemother., 23, 493-502; Eady et al., 1993, Br. J. Dermatol. 128, 556-560; Kurasawa et al., 1988, J. Dermatol. 15, 149-154). A selective medium has been proposed for the isolation of the wild and antibiotic-resistant strains of Propionibacterium acnes (Marino and Stoughton, 1982, J. American Acad. Dermatol., 6, 902-908).

Brief Summary Text (15):

The addition of nalidixic acid (0.02% w/v) to a medium containing yeast extract, sodium lactate and agar has recently been used to detect propionic bacteria in Leerdammer cheese and in anaerobic reactors (Riedel and Britz, (1993) Biodiversity and Conservation 2, 400-411). In both cases, the medium proved to be insufficiently selective to enable the propionic bacteria to be counted.

Brief Summary Text (37):

first generation quinolones (nalidixic acid, etc.)

Detailed Description Text (24):

The selectivity of the culture medium forming the object of the present invention was tested in comparison with the YELA reference medium on ultra-pure milk (unpasteurized skim milk micro-filtered on a membrane with pore diameter 1.4 microns) to which had been added 500 ml of a culture of propionic bacteria with concentration  $2.6 \times 10^{sup.9}$  cells/ml to 15 000 l of milk (corresponding to an inoculation level of approximately  $1 \times 10^{sup.5}$  propionic bacteria cells per ml of milk). The said milk was also inoculated with  $1 \times 10^{sup.6}$  mesophilic and thermophilic lactic bacteria per ml. The counts carried out with the two media led to the following results:

Detailed Description Text (38):

solution G: gentamycin (Sigma P3632) 32.0 mg qsp 100 ml distilled water. solution N: nalidixic acid (Sigma N 8878) 64.0 mg qsp 20 ml distilled water in basic medium (addition of NaOH).

Detailed Description Paragraph Table (4):

TABLE 4

Resistance of propionic bacteria to antibiotics (1) Strains Antibiotic CIP CIP CIP CIP DSM Family (mg/l)  
103026 103027 103028 103029 4900

BETALACTAMINES PENICILLIN Group G Penicillin (0.25/16) 4/0 3/0 3/0 0/0 4/0 PENICILLIN Group M Oxacillin (2) 4 4 4 3 4 AMINO-PENICILLIN Amoxicillin (4/16) 0/0 0/0 0/0 0/0 0/0 PIVMECILLINAM Pivmecillinam (2/8) 4/4 4/4 4/4 4/4 3/3 CEPHALOSPORIN 1.degree. G Cephalothin (8/32) 1/0 0/0 0/0 0/0 0/0 CEPHALOSPORIN 2.degree. G Cefoxitin (8/32) 4/4 4/2 4/2 0/0 2/0 CEPHALOSPORIN 3.degree. G Cefotaxime (4/32) 2/0 0/0 0/0 0/0 0/0 AMINOSIDES Kanamycin (8/16) 4/4 4/4 4/4 4/4 4/4 Tobramycin (4/8) 4/4 4/4 4/4 4/4 4/4 Gentamycin (4/8) 4/4 4/4 4/4 4/2 4/4 Netilmicin (4/8) 4/4 4/4 4/4 4/3 4/4 PHENICOLS Chloramphenicol (8/16) 0/0 0/0 0/0 0/0 0/0 CYCLINES Tetracycline (4/8) 0/0 0/0 0/0 0/0 0/0 MACROLIDES and Erythromycin (1/4) 0/0 0/0 0/0 0/0 4/3 derivatives Lincomycin (2/8) 3/0 4/0 0/0 0/0 2/0 Clindamycin (2) 0 0 0 0 0 Pristinamycin (2/4) 0/0 0/0 0/0 0/0 0/0 RIFAMYCINS Rifampicin (4/16) 0/0 0/0 0/0 0/0 0/0 POLYPEPTIDES Colistin (4) 4 4 4 4 4 IMIDAZOLES Metronidazole (4) 4 4 4 4 4 SULFAMIDES Co-trimoxazole (2/8) 2/1 2/1 0/0 0/0 0/0 QUINOLONES 1.degree. G Nalidixic acid (8/16) 4/4 4/4 4/4 4/4 4/4 QUINOLONES 2.degree. G Pefloxacin (1/4) 4/3 3/0 4/3 4/1 4/1 Norfloxacin (1/8) 4/4 4/4 4/4 4/1 4/4 GLYCOPEPTIDES Vancomycin (4/8) 0/0 0/0 0/0 0/0 0/0 OTHERS Fosfomycin (32/64) 4/4 4/4 4/3 4/3 4/4 Fusidic acid (2/16) 0/0 0/0 0/0 0/0 0/0

(1) The growth was graded from 0 (no growth) to 4 (growth equivalent to that observed on a control medium without antibiotic).

CLAIMS:

1. A composition useful for counting propionic bacteria under anaerobic conditions and which composition comprises a complex medium for culturing said propionic bacteria supplemented with a) at least one lithium compound and b) at least one polyol or antibiotic selected from antibiotics to which the propionic bacteria are resistant.

13. In a method for counting propionic bacteria in a biological sample, the improvement which comprises anaerobically incubating said sample or a decimal dilution thereof in a medium according to claim 1 before counting said bacteria.

# WEST Search History

DATE: Friday, October 03, 2003

## Set Name Query

side by side

Hit      Set  
Count   Name  
result s t

*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES;  
OP=AND*

L1	<p>((((fraction\$ or fragment\$ or mitochondr\$  near5 (membran\$ ))same (media or medium or  agar\$ or broth) )and (((azide or sodiumazide or  na3n or 3-at or cyanide or cianyde or nalidixic  or carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) )or ((azide or sodiumazide or na3n  or 3-at or cyanide or cianyde or nalidixicacid or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) ))not (((fraction\$ or fragment\$ or  mitochondr\$ )near5 (membran\$ )).ti,ab,clm.  )and (((fraction\$ or fragment\$ or mitochondr\$  )near5 (membran\$ )).ti,ab,clm. ))) and anaerob\$  not (((((azide or sodiumazide or na3n or 3-at or  cyanide or cianyde or nalidixic or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) )or ((azide or sodiumazide or na3n  or 3-at or cyanide or cianyde or nalidixicacid or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) ))).clm. )and anearob\$ ))</p>	35	L1
L2	5789191.pn.	2	L2
L3	(method or process).ti. and anaerob\$.clm.	1145	L3



L4	L3 and (azide\$ or \$azide)	36	L4
L5	(method or process).ti. and anaerob\$.ti.	1125	L5
L6	L5 and l4	8	L6
L7	(method or process).clm. and anaerob\$.clm.	1866	L7
L8	L4 not l6	28	L8

END OF SEARCH HISTORY

# WEST Search History

DATE: Friday, October 03, 2003

## Set Name Query

sid by side

Hit      Set  
Count   Name  
result set

*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES;  
OP=AND*

L1	<p>((((fraction\$ or fragment\$ or mitochondr\$  near5 (membran\$ ))same (media or medium or  agar\$ or broth) )and (((azide or sodiumazide or  na3n or 3-at or cyanide or cianyde or nalidixic  or carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) )or ((azide or sodiumazide or na3n  or 3-at or cyanide or cianyde or nalidixicacid or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) ))not (((fraction\$ or fragment\$ or  mitochondr\$ )near5 (membran\$ )).ti,ab,clm.  )and (((fraction\$ or fragment\$ or mitochondr\$  )near5 (membran\$ )).ti,ab,clm. ))) and anaerob\$  not (((((azide or sodiumazide or na3n or 3-at or  cyanide or cianyde or nalidixic or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) )or ((azide or sodiumazide or na3n  or 3-at or cyanide or cianyde or nalidixicacid or  carboxylcyanide or pea or phenylethanol or  phenyl-ethanol or (atpase\$ near3 (inhibit\$ or  antagon\$))) ))).clm. )and anearob\$ ))</p>	35	L1
L2	5789191.pn.	2	L2
L3	(method or process).ti. and anaerob\$.clm.	1145	L3

L4	L3 and (azide\$ or \$azide)	36	L4
L5	(method or process).ti. and anaerob\$.ti.	1125	L5
L6	L5 and l4	8	L6
L7	(method or process).clm. and anaerob\$.clm.	1866	L7
L8	L4 not l6	28	L8
L9	(media or medium or liquid or broth or agar or agarous) same (azide or \$azide or azide\$)	7294	L9
L10	(fraction\$ or fragment\$ or mitochondr\$ )near3 (membran\$ )	11958	L10
L11	L10 same l9	14	L11
L12	L10 and l9 not l11	321	L12
L13	L12 and anaerob\$.ti,ab,clm.	2	L13
L14	adler and anaerob\$	107	L14
L15	L14 and l9	14	L15
L16	oxygen near5 (deplet\$ or without or remov\$ or exhaust\$ or absorp\$ or adsorp\$)	78512	L16
L17	L16 same l9	2	L17

END OF SEARCH HISTORY

Development of a spectrophotometric immunoagglutination assay for  
quantitation of IgG for Escherichia coli 0157.

AUTHOR: Abolmaaty A; Levin R E(a); Abdallah M A

AUTHOR ADDRESS: (a)Dep. Food Sci., Massachusetts Agric. Exp. Stn., Univ.  
Massachusetts, Amherst, MA 01003\*\*USA

JOURNAL: Microbios 91 (366):p37-46 1997

ISSN: 0026-2633

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

*Reconsidered*  
*10/3/03*  
*vs*

ABSTRACT: A direct spectrophotometric immuno-agglutination assay for quantitation of specific Escherichia coli 0157 IgG was developed. Initial linear rates of increase in absorbance at 550 nm as a result of agglutination were found to increase with both cell and antiserum concentrations. Optimum conditions consisted of  $1 \times 10^8$  cells/ml, 40degree C, and 0.005 M phosphate buffer (PB) containing 0.05% NaCl and 0.02% sodium azide at pH 7.4. A completely linear increase in absorbance was obtained with affinity purified IgG under optimum conditions of the assay. The useful range of the assay was between 13 and 104 mug of 0157 specific IgG per ml of reaction mixture.

DESCRIPTORS:

MAJOR CONCEPTS: Immune System (Chemical Coordination and Homeostasis);  
Infection; Methods and Techniques

BIOSYSTEMATIC NAMES: Enterobacteriaceae-- **Facultatively Anaerobic**  
Gram-Negative Rods, Eubacteria, Bacteria, Microorganisms; Leporidae--  
Lagomorpha, Mammalia, Vertebrata, Chordata, Animalia

ORGANISMS: rabbit (Leporidae)--host; Escherichia-coli  
(Enterobacteriaceae)--serovar-0157:H7, strain-C9490

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Animals; Bacteria; Chordates;  
Eubacteria; Lagomorphs; Mammals; Microorganisms; Nonhuman Mammals;  
Nonhuman Vertebrates; Vertebrates

CHEMICALS & BIOCHEMICALS: antigen-antibody complex; IgG {immunoglobulin  
G}

03321621 BIOSIS NO.: 000072049725

**BACTERIAL SURVIVAL IN A DILUTE ENVIRONMENT**

AUTHOR: SJOGREN R E; GIBSON M J

AUTHOR ADDRESS: DEP. MICROBIOL. AND BIOCHEM., UNIV. VERMONT, BURLINGTON,  
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JOURNAL: APPL ENVIRON MICROBIOL 41 (6). 1981. 1331-1336. 1981

FULL JOURNAL NAME: Applied and Environmental Microbiology

CODEN: AEMID

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

**ABSTRACT:** Bacteria were isolated from lake water and their ability to remain viable in a dilute, nutrient-deficient environment was tested by a method that permits suspension of test bacteria between 2 appressed microporous membranes in an aqueous environment. This approach permitted separation of the lake isolates into 2 categories. Members of the tribe Klebsiellae had a prolonged survival rate of 40% or better after 24 h; nonsurvivors were not viable for much longer than 24 h. These nonsurvivors belonged to the genera *Acinetobacter*, *Aeromonas*, *Alcaligenes*, *Erwinia*, *Escherichia*, *Flavobacterium* and *Pseudomonas*. Differences in RNase and ATPase levels between *Escherichia coli* (nonsurvivor) and *Klebsiella* (survivor) cells were detected. At pH 7.5, stressed *E. coli* cells contained 14% of the ATPase activity detected in the control; at pH 5.5, in the presence of Ca ions, these same cells contained 50% of the control ATPase levels. At pH 7.2, *E. coli* cells were strongly inhibited by an ATPase inhibitor, bathophenanthroline (88%); oligomycin (64%); and the proton ionophore carbonyl cyanide-m-chlorophenyl hydrazone (67%). Sodium azide and valinomycin were only moderately inhibitory (15 and 28%, respectively). Although the ability to scavenge internal endogenous reserves seems important, certain enteric bacteria seem capable of using acidic conditions (pH 5.5) as an electrochemical gradient to generate necessary high-energy intermediates for prolongation of survival beyond that possible in environments of near-neutral pH.

**Superoxide dismutase and catalase in marine bioluminescent bacteria.**

AUTHOR: Gonzalez-Lama Z(a); Diez del Pino A(a)

AUTHOR ADDRESS: (a)Microbiologia, Departamento de Ciencias Clinicas,  
Facultad de Ciencias de la Salud, Universidad \*\*Spain

JOURNAL: Boletin Instituto Espanol de Oceanografia 12 (2):p131-137 1996

ISSN: 0074-0195

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: Spanish; Non-English

SUMMARY LANGUAGE: English; Spanish

ABSTRACT: Catalase and superoxide dismutase (SOD) were studied in strains of marine bioluminescent bacteria. We found several isozymes of catalase in these strains and only one isozyme of superoxide dismutase. We observed that catalase levels rose as bioluminescence emission fell. A dark strain of *Photobacterium phosphoreum* var. K showed the maximum levels of catalase. There are two types of catalases in this strain: an isozyme of pI 7.2 inhibited by 3-amino, 1, 2, 4-triazole and others isozymes resistant to this inhibitor. All isozymes of catalase from these bioluminescent marine bacteria are hemo-proteins, since they were inhibited by cyanide and azide. The single isozyme of SOD is a Fe-SOD.

REGISTRY NUMBERS: 9054-89-1: SUPEROXIDE DISMUTASE; 9001-05-2: CATALASE;  
57-12-5: CYANIDE; 14343-69-2: **AZIDE**

**Recovery of Escherichia coli Biotype I and Enterococcus spp. during refrigerated storage of beef carcasses inoculated with a fecal slurry.**

AUTHOR: Calicioglu M; Buege D R; Ingham S C; Luchansky J B(a)

AUTHOR ADDRESS: (a)Department of Food Science, and Department of Food Microbiology and Toxicology, University of Wisconsin, Madison, Madison, WI, 53706\*\*USA

JOURNAL: Journal of Food Protection 62 (8):p944-947 Aug., 1999

ISSN: 0362-028X

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English

**ABSTRACT:** Three beef front quarters/carcasses were inoculated with a slurry of cattle manure. During storage at 4degreeC, two sponge samples from each of three sites (i.e., 100 cm<sup>2</sup> from each of two fat surfaces and 100 cm<sup>2</sup> from a lean surface) were taken from each of the three carcasses on days 0, 1, 3, 7, and 10 after inoculation. The initial numbers of Escherichia coli averaged 2.0 log<sub>10</sub> CFU/cm<sup>2</sup> (1.21 to 2.47 log<sub>10</sub> CFU/cm<sup>2</sup>) using the Petrifilm method and 2.09 log<sub>10</sub> most probable number (MPN)/cm<sup>2</sup> (0.88 to 2.96 log<sub>10</sub> MPN/cm<sup>2</sup>) using the MPN method. The initial numbers of enterococci averaged 3.34 log<sub>10</sub> CFU/cm<sup>2</sup> (3.07 to 3.79 log<sub>10</sub> CFU/cm<sup>2</sup>) using kanamycin esculin azide agar. In general, an appreciable reduction in the numbers of E. coli occurred during the first 24 h of storage; for the Petrifilm method an average reduction of 1.37 log<sub>10</sub> CFU/cm<sup>2</sup> (0.69 to 1.71 log<sub>10</sub> CFU/cm<sup>2</sup>) was observed, and for the MPN method an average reduction of 1.52 log<sub>10</sub> MPN/cm<sup>2</sup> (0.47 to 2.08 log<sub>10</sub> MPN/cm<sup>2</sup>) was observed. E. coli were not detected (<-0.12 log<sub>10</sub> CFU/cm<sup>2</sup>) using Petrifilm on day 7 of the storage period on two (initial counts of 1.21 and 2.29 log<sub>10</sub> CFU/cm<sup>2</sup>) of the three carcasses. However, viable E. coli cells were recovered from these two carcasses after a 24-h enrichment at 37degreeC in EC broth. Viable E. coli cells were detected at levels of -0.10 log<sub>10</sub> CFU/cm<sup>2</sup> on the third carcass (initial count of 2.47 log<sub>10</sub> CFU/cm<sup>2</sup>) after 7 days at 4degreeC. No significant difference in recovery of viable cells was observed between the MPN and Petrifilm methods on days 0, 1, and 3 (P > 0.05). However, viable E. coli cells were recovered from all three carcasses by the MPN method on day 7 at an average of -0.29 log<sub>10</sub> MPN/cm<sup>2</sup> (-0.6 to -0.1 log<sub>10</sub> MPN/cm<sup>2</sup>). On day 10, viable cells were recovered by the MPN method from two of the three carcasses at -0.63 and -0.48 log<sub>10</sub> MPN/cm<sup>2</sup> but were not recovered from the remaining carcass (<-0.8 log<sub>10</sub> MPN/cm<sup>2</sup>). Similar to E. coli, the greatest reduction (average of 1.26 log<sub>10</sub> CFU/cm<sup>2</sup>, range = 1.06 to 1.45 log<sub>10</sub> CFU/cm<sup>2</sup>) in the numbers of enterococci occurred during the first 24 h of storage. Because of higher initial numbers and a slightly slower rate of decrease, the numbers of Enterococcus spp. were significantly higher (P < 0.017) than the numbers of E. coli Biotype I after 3, 7, and 10 days of storage. These results suggest that enterococci may be useful as an indicator of fecal contamination of beef carcasses.



Active efflux and diffusion are involved in transport of *Pseudomonas aeruginosa* cell-to-cell signals.

AUTHOR: Pearson James P; van Delden Christian; Iglewski Barbara H(a)

AUTHOR ADDRESS: (a)Department of Microbiology and Immunology, University of Rochester, 601 Elmwood Ave., Rochester, \*\*USA

JOURNAL: Journal of Bacteriology 181 (4):p1203-1210 Feb., 1999

ISSN: 0021-9193

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Many gram-negative bacteria communicate by N-acyl homoserine lactone signals called autoinducers (AIs). In *Pseudomonas aeruginosa*, cell-to-cell signaling controls expression of extracellular virulence factors, the type II secretion apparatus, a stationary-phase sigma factor (sigmas), and biofilm differentiation. The fact that a similar signal, N-(3-oxohexanoyl) homoserine lactone, freely diffuses through *Vibrio fischeri* and *Escherichia coli* cells has led to the assumption that all AIs are freely diffusible. In this work, transport of the two *P. aeruginosa* AIs, N-(3-oxododecanoyl) homoserine lactone (3OC12-HSL) (formerly called PAI-1) and N-butyryl homoserine lactone (C4-HSL) (formerly called PAI-2), was studied by using tritium-labeled signals. When (3H)C4-HSL was added to cell suspensions of *P. aeruginosa*, the cellular concentration reached a steady state in less than 30 s and was nearly equal to the external concentration, as expected for a freely diffusible compound. In contrast, (3H)3OC12-HSL required about 5 min to reach a steady state, and the cellular concentration was 3 times higher than the external level. Addition of inhibitors of the cytoplasmic membrane proton gradient, such as azide, led to a strong increase in cellular accumulation of (3H)3OC12-HSL, suggesting the involvement of active efflux. A defined mutant lacking the mexA-mexB-oprM-encoded active-efflux pump accumulated (3H)3OC12-HSL to levels similar to those in the azide-treated wild-type cells. Efflux experiments confirmed these observations. Our results show that in contrast to the case for C4-HSL, *P. aeruginosa* cells are not freely permeable to 3OC12-HSL. Instead, the mexA-mexB-oprM-encoded efflux pump is involved in active efflux of 3OC12-HSL. Apparently the length and/or degree of substitution of the N-acyl side chain determines whether an AI is freely diffusible or is subject to active efflux by *P. aeruginosa*.

**Temperature-dependent azide sensitivity of growth and ATPase activity  
in the facultative thermophile, Bacillus coagulans**

JONES M V; SPENCER W N; EDWARDS C

Univ. Liverpool, dep. microbiology, Liverpool L69 3BX, United Kingdom

Journal: Journal of general Microbiology, 1984, 130 (1) 95-101

ISSN: 0022-1287 Availability: CNRS-4410

No. of Refs.: 24 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United Kingdom

Language: English

L'inhibition de la croissance de Bacillus coagulans par l'aide de sodium décroît quand la température de croissance augmente alors que le contenu en cytochrome et particulièrement en cytochrome augmente. L'activité de l'ATPase est sensible à l'azide mais l'inhibition varie à la fois avec la croissance et la température

English Descriptors: Bacillus coagulans; Inhibition; Growth; Temperature;

Enzyme; ATPase; Enzymatic activity; Cytochrome; **Anaerobiosis** ;

Sensitivity resistance; Metabolism; Bacteria

French Descriptors: Bacillus coagulans; Inhibition; Croissance; Temperature

; Enzyme; ATPase; Activité enzymatique; Cytochrome; **Anaérobiose** ;

Sensibilité résistance; Métabolisme; Bactérie; Sodium Azote

**BACTERIAL SURVIVAL IN A DILUTE ENVIRONMENT**

AUTHOR: SJOGREN R E; GIBSON M J

AUTHOR ADDRESS: DEP. MICROBIOL. AND BIOCHEM., UNIV. VERMONT, BURLINGTON,  
VERMONT 05405.

JOURNAL: APPL ENVIRON MICROBIOL 41 (6). 1981. 1331-1336. 1981

FULL JOURNAL NAME: Applied and Environmental Microbiology

CODEN: AEMID

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: Bacteria were isolated from lake water and their ability to remain viable in a dilute, nutrient-deficient environment was tested by a method that permits suspension of test bacteria between 2 appressed microporous membranes in an aqueous environment. This approach permitted separation of the lake isolates into 2 categories. Members of the tribe Klebsiellae had a prolonged survival rate of 40% or better after 24 h; nonsurvivors were not viable for much longer than 24 h. These nonsurvivors belonged to the genera Acinetobacter, Aeromonas, Alcaligenes, Erwinia, Escherichia, Flavobacterium and Pseudomonas. Differences in RNase and ATPase levels between Escherichia coli (nonsurvivor) and Klebsiella (survivor) cells were detected. At pH 7.5, stressed E. coli cells contained 14% of the ATPase activity detected in the control; at pH 5.5, in the presence of Ca ions, these same cells contained 50% of the control ATPase levels. At pH 7.2, E. coli cells were strongly inhibited by an ATPase inhibitor, bathophenanthroline (88%); oligomycin (64%); and the proton ionophore carbonyl cyanide-m-chlorophenyl hydrazone (67%). Sodium azide and valinomycin were only moderately inhibitory (15 and 28%, respectively). Although the ability to scavenge internal endogenous reserves seems important, certain enteric bacteria seem capable of using acidic conditions (pH 5.5) as an electrochemical gradient to generate necessary high-energy intermediates for prolongation of survival beyond that possible in environments of near-neutral pH.

EFFECTS OF METABOLIC INHIBITORS ON THE ALCOHOLIC FERMENTATION BY SEVERAL  
YEASTS IN BATCH OR IN IMMOBILIZED CELL SYSTEMS

AUTHOR: AMIN G; STANDAERT P; VERACHTERT H

AUTHOR ADDRESS: LAB. INDUSTRIAL MICROBIOL. BIOCHEM., UNIV. LEUVEN,  
KARDINAAL MERCIERLAAN, 92 B-3030 HEVERLEE-LOUVAIN, BELGIUM.

JOURNAL: APPL MICROBIOL BIOTECHNOL 19 (2). 1984. 91-99. 1984

CODEN: EJABD

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: In previous papers it was shown that the bacterium *Zymomonas mobilis* might be an interesting alternative for industrial alcohol production from sugar, compared to *Saccharomyces bayanus*. Factors that might increase the glucose to ethanol conversion efficiency and which are in favor of the bacterium, are the production of less biomass and less by-products such as glycerol, succinic acid, butanediol, acetoin and acetic acid. In order to reduce the synthesis of biomass, 3 metabolic inhibitors were now studied: dinitrophenol, **azide** and arsenate. Their effects on the alcoholic fermentation in batch and in immobilized cell system were investigated, using 3 yeasts: *S. bayanus*, *Schizosaccharomyces pombe* and *S. diastaticus*. Dinitrophenol in 0.1 mM concentration was effective in increasing the conversion of glucose to ethanol especially with *S. bayanus* while **azide** in 0.1 mM concentration was better with *S. pombe*. In immobilized systems high steady state ethanol production from 15% glucose media was obtained by inclusion into the media of dinitrophenol or **azide**. Arsenate had less effect at the concentrations used. As a result, ethanol productivity in grams per hour was increased from around 70 in the absence of inhibitor to around 74 in the presence of dinitrophenol with *S. bayanus*. With *S. pombe* the productivity was increased from around 65 in the absence of inhibitor to around 74 in the presence of **azide**. The specific ethanol productivity expressed as 1 g ethanol formed per hour and per gram viable cells was increased from 0.87 to 1.37 for *S. pombe* and from 1.02 to 1.66 for *S. bayanus*.

5135169 BIOSIS NO.: 000081093294

**INFLUENCE OF ENDOGENOUS CATALASE ACTIVITY ON THE SENSITIVITY OF THE ORAL BACTERIUM ACTINOBACILLUS-ACTINOMYCETEMCOMITANS AND THE ORAL HAEMOPHILI TO THE BACTERICIDAL PROPERTIES OF HYDROGEN PEROXIDE**

AUTHOR: MIYASAKI K T; WILSON M E; ZAMBON J J; GENCO R J

AUTHOR ADDRESS: DEP. ORAL BIOLOGY, STATE UNIV. NEW YORK AT BUFFALO, BUFFALO, NY 14214, USA.

JOURNAL: ARCH ORAL BIOL 30 (11-12). 1985 (RECD. 1986). 843-848. 1985

FULL JOURNAL NAME: Archives of Oral Biology

CODEN: AOBIA

RECORD TYPE: Abstract

LANGUAGE: ENGLISH

**ABSTRACT:** Actinobacillus actinomycetemcomitans and the genetically-related oral haemophili (*Haemophilus segnis*, *Haemophilus aphrophilus* and *Haemophilus paraphrophilus*) exhibit a range of sensitivities to the lethal effect of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>), *A. actinomycetemcomitans* being the most resistant. To extend this information, susceptibility to a range of H<sub>2</sub>O<sub>2</sub> concentrations (10<sup>-6</sup>-10<sup>-3</sup> M) was assessed by incubating bacterial suspensions for 1 h at 37.degree. C in the presence of H<sub>2</sub>O<sub>2</sub> and spreading the suspensions on chocolate agar plates to determine the concentration of H<sub>2</sub>O<sub>2</sub> producing a 50 per cent reduction in colony-forming units (LD<sub>50</sub>). Catalase activity was quantified with a Clark-type oxygen electrode, which polarographically monitored the formation of dissolved oxygen in bacterial suspensions on sonicates following addition of reagent H<sub>2</sub>O<sub>2</sub>. Sensitivity to H<sub>2</sub>O<sub>2</sub> did not correlate with catalase activity, either in intact cells or in bacterial sonicates. Specifically, some bacterial strains with undetectable catalase activity were highly resistant to H<sub>2</sub>O<sub>2</sub>. Micromolar concentrations of sodium azide which completely inhibited cell-associated catalase activity did not affect the resistance of *A. actinomycetemcomitans* to H<sub>2</sub>O<sub>2</sub>. Thus, the endogenous catalase activity of *A. actinomycetemcomitans* and certain oral haemophili is not an important determinant of resistance to the bactericidal effects of H<sub>2</sub>O<sub>2</sub>.

**Expression of the *Zymomonas mobilis* gfo gene for NADP-containing glucose:  
Fructose oxidoreductase (GFOR) in *Escherichia coli*: Formation of  
enzymatically active preGFOR but lack of processing into a stable  
periplasmic protein.**

AUTHOR: Wiegert Thomas; Sahm Hermann; Sprenger Georg A(a)

AUTHOR ADDRESS: (a)Inst. Biotechnol. 1, Forschungszentrum Juelich GmbH,  
Postfach 1913, D-52425 Juelich\*\*Germany

JOURNAL: European Journal of Biochemistry 244 (1):p107-112 1997

ISSN: 0014-2956

RECORD TYPE: Abstract

LANGUAGE: English

**ABSTRACT:** Glucose:fructose oxidoreductase (GFOR) of the gram-negative bacterium *Zymomonas mobilis* is a periplasmic enzyme with tightly bound cofactor NADP. The preprotein carries an unusually long Nterminal signal peptide of 52 amino acid residues. Expression of the gfo gene in cells of *Escherichia coli* K12, under the control of a tac promoter, led to immunologically detectable proteins in western blots. and to the formation of an enzymatically active precursor form (preGFOR), located in the cytosol. Processing of preGFOR to the mature form was not observed in *E. coli*. Replacement of the authentic GFOR signal peptide by the shorter signal peptides of PhoA or OmpA from *E. coli* led to processing of the respective GFOR precursor proteins. However, the processed proteins were unstable and rapidly degraded in the periplasm unless an *E. coli* mutant was used that carried a triple lesion for periplasmic and outer-membrane proteases. When fusion-protein export was inhibited by sodium azide or carboxylcyanide m-chlorophenylhydrazide, the cytoplasmic precursor forms of the respective preGFOR were not degraded. A major protease-resistant GFOR peptide from the OmpA-GFOR fusion was found within spheroplasts of *E. coli* to which NADP had been added externally. The formation of this peptide did not occur in the presence of NAD. It is concluded that NADP is required for GFOR to fold into its native conformation and that its absence from the *E. coli* periplasm is responsible for failure to form a stable periplasmic protein. The results strongly suggest that, in *Z. mobilis*, additional protein factors are required for the transport of NADP across the plasma membrane and/or incorporation of NADP into the GFOR apoenzyme.

11536178 BIOSIS NO.: 199800317510

**Catalase catalyzes of peroxynitrite-mediated phenolic nitration.**

AUTHOR: Kono Yasuhisa(a); Yamasaki Tomoaki; Ueda Akane; Shibata Hitoshi

AUTHOR ADDRESS: (a)Dep. Life Sci. Biotechnol., Fac. Life Environmental  
Sci., Shimane Univ., Matsue, Shimane 690\*\*Japan

JOURNAL: Bioscience Biotechnology and Biochemistry 62 (3):p448-452 March,  
1998

ISSN: 0916-8451

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Catalase catalyzed the peroxynitrite-mediated nitration of 4-hydroxyphenylacetic acid. The curve for the pH dependence of nitration was similar to that for the reaction between peroxynitrite and phenol. Cyanide, **azide**, and 3-amino-1,2,4-triazole inhibited the nitration in a dose-dependent way. When catalase was mixed with peroxynitrite, Compound I was detected as an intermediate. Because **azide** was an electron donor for the peroxidatic action of catalase, and because 3-amino-1,2,4-triazole inhibited catalase activity by binding with Compound I, peroxynitrite-mediated phenolic nitration was probably accompanied by Compound I formation. Both catalase and superoxide dismutase protected Escherichia coli from peroxynitrite toxicity.



**Role of the lateral channel in catalase HP11 of *Escherichia coli*.**

AUTHOR: Sevinc M Serdal; Mate Maria J; Switala Jack; Fita Ignacio; Loewen Peter C(a)

AUTHOR ADDRESS: (a)Department of Microbiology, University of Manitoba, Winnipeg, MB, R3T 2N2\*\*Canada

JOURNAL: Protein Science 8 (3):p490-498 March, 1999

ISSN: 0961-8368

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

**ABSTRACT:** The heme-containing catalase HP11 of *Escherichia coli* consists of a homotetramer in which each subunit contains a core region with the highly conserved catalase tertiary structure, to which are appended N- and C-terminal extensions making it the largest known catalase. HP11 does not bind NADPH, a cofactor often found in catalases. In HP11, residues 585-590 of the C-terminal extension protrude into the pocket corresponding to the NADPH binding site in the bovine liver catalase. Despite this difference, residues that define the NADPH pocket in the bovine enzyme appear to be well preserved in HP11. Only two residues that interact ionically with NADPH in the bovine enzyme (Asp212 and His304) differ in HP11 (Glu270 and Glu362), but their mutation to the bovine sequence did not promote nucleotide binding. The active-site heme groups are deeply buried inside the molecular structure requiring the movement of substrate and products through long channels. One potential channel is about 30 Å in length, approaches the heme active site laterally, and is structurally related to the branched channel associated with the NADPH binding pocket in catalases that bind the dinucleotide. In HP11, the upper branch of this channel is interrupted by the presence of Arg260 ionically bound to Glu270. When Arg260 is replaced by alanine, there is a threefold increase in the catalytic activity of the enzyme. Inhibitors of HP11, including azide, cyanide, various sulfhydryl reagents, and alkylhydroxylamine derivatives, are effective at lower concentration on the Ala260 mutant enzyme compared to the wild-type enzyme. The crystal structure of the Ala260 mutant variant of HP11, determined at 2.3 Å resolution, revealed a number of local structural changes resulting in the opening of a second branch in the lateral channel, which appears to be used by inhibitors for access to the active site, either as an inlet channel for substrate or an exhaust channel for reaction products.

**Characterization of a gram-positive bacterium from the proventriculus of budgerigars (Melopsittacus undulatus).**

Scanlan C M; Graham D L

Department of Veterinary Microbiology and Parasitology, Texas A&M University, College Station 77843-4467.

Avian diseases (UNITED STATES) Jul-Sep 1990, 34 (3) p779-86, ISSN 0005-2086 Journal Code: 0370617

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

The cellular, cultural, and biochemical characteristics of eight isolates of a large gram-positive bacillus that are commonly observed as apparently normal flora in the proventriculus of budgerigars (*Melopsittacus undulatus*) were determined. The bacterium was highly pleomorphic and changed markedly in both diameter and length when subcultured on agar media. The bacterium was **facultative anaerobic** and capnophilic, hemolytic on blood agar, and formed flat colonies with irregular edges after incubation for several days. All isolates grew on sodium **azide** agar but did not grow on MacConkey agar. The isolates were catalase-negative and oxidase-negative and did not reduce nitrate. All isolates failed to utilize arginine, lysine, ornithine or tryptophane but produced acid from glucose, galactose, levulose, maltose, melibiose, starch, and sucrose. All isolates produced acetoin from glucose and hydrolyzed esculin. The eight isolates could not be identified to either genus or species level based on the descriptions of currently classified organisms in the division Firmicutes as described in Bergey's Manual of Systematic Bacteriology.

**WEST**

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L11: Entry 22 of 62

File: PGPB

Jul 5, 2001

DOCUMENT-IDENTIFIER: US 20010006809 A1

TITLE: MICROBIOLOGICAL DESULFURIZATION OF SULFUR CONTAINING GASES

Abstract Paragraph (1):

A consortium, ATCC 202177, is enriched to remove target sulfur compounds from gases in the presence of ammonia, cyanide, carbon monoxide, and other toxic gases and mixtures thereof. The ATCC 202177 is cultured in an anaerobic or aerobic nutrient medium until enough cells of ATCC 202177 are recovered to remove the target sulfur species at a pressure ranging from 1 to 80 atmospheres.

Summary of Invention Paragraph (29):

[0024] It is a further object of the present invention to provide a method for the production of a facultative anaerobic microbial consortium which is capable of reproducibly removing gaseous sulfur species when these sulfur species are contaminants in a gas stream containing any one, or all of the following: ammonia, carbon dioxide, carbon monoxide, cyanide, hydrogen, methane, higher gaseous hydrocarbons, and nitrogen.

Summary of Invention Paragraph (30):

[0025] It is still another object of the present invention to provide a process for anaerobic microbial desulfurization of a given gas stream in the presence of ammonia, carbon dioxide, carbon monoxide, cyanides, hydrogen, methane, aliphatic hydrocarbons, and nitrogen.

Summary of Invention Paragraph (31):

[0026] The above objectives are achieved herein by providing a viable mixed culture, or consortium, of microorganisms, which has been deposited under the Budapest Treaty with the American Type Culture Collection (ATCC) as deposit number ATCC 202177. This microbial consortium, known as ATCC 202177 or SSII, is prepared by enriching microorganisms in the presence of target gaseous sulfur species contained in the presence of ammonia, carbon monoxide, carbon dioxide, cyanide, hydrogen, and nitrogen.

Summary of Invention Paragraph (34):

[0029] The reaction mixture can also contain cyanide, either in the gas or liquid phase. The ATCC 202177 is suspended in its nutrient medium (TSN, Table 1), and under anaerobic conditions in an appropriate culture vessel. Under these conditions, the ATCC 202177 is contacted with the gaseous mixture containing sulfur compounds along with other gases, including ammonia and cyanide(s). The latter two compounds can be either in the liquid or the gas phase. The exit gas stream from the culture vessel (a bioreactor) is free of gaseous sulfur compounds, particularly hydrogen sulfide.

Brief Description of Drawings Paragraph (10):

[0038] FIG. 7 shows that growth of un-enriched ATCC 202177 is inhibited by even 50 ppm of cyanide as

potassium cyanide.

Brief Description of Drawings Paragraph (11):

[0039] FIG. 8 shows that cyanide as potassium cyanide inhibits removal of hydrogen sulfide by un-enriched ATCC 202177.

Brief Description of Drawings Paragraph (12):

[0040] FIG. 9 shows that enriched ATCC 202177 removes hydrogen sulfide from a gaseous mixture containing carbon dioxide, carbon monoxide, cyanide (up to 100 ppm as potassium cyanide), hydrogen, methane, and nitrogen.

Detail Description Paragraph (24):

[0059] The fate of major ionic species comprising the culture medium was monitored by high-pressure liquid chromatography (HPLC) and inductively coupled plasma spectrometer (ICP-AES). The ions monitored were  $\text{NH}_4^+$ ,  $\text{Fe}^{2+}$ ,  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{SO}_4^{2-}$ , and  $\text{S}_2\text{O}_3^{2-}$ . The parameters used for HPLC were a Waters 501 HPLC pump connected to a WISP U6K autosampler. The columns used were IC-PAK anion HC and Hamilton PRP-X200. The detectors used were a 400 UV detector and a 430 conductivity detector. Different eluents were used depending on the ion to be analyzed. For example, 5 mM dibasic sodium phosphate was used to separate sulphur species. The eluent was prepared by adding 0.7092 g dibasic sodium phosphate to a one-liter volumetric flask and bringing the volume to the mark with HPLC grade water. The eluent was filtered through a 0.2  $\mu\text{m}$  membrane filter, and protected from adsorbing atmospheric carbon dioxide.

Detail Description Paragraph (42):

[0069] The next examples were used to evaluate the removal of hydrogen sulfide in the presence of carbon dioxide, methane, nitrogen, and other compounds that are present in either the gas or the liquid phase of the reaction mixture. The compounds tested were: carbon monoxide (CO), hydrogen ( $\text{H}_2$ ), cyanide (CN), and ammonia ( $\text{NH}_3$ ).

Detail Description Paragraph (45):

[0070] The experimental setup for Examples 4-7 was that shown in FIG. 2. The following gives the general experimental procedure used to evaluate the efficacy of ATCC 202177 in removing hydrogen sulfide in the presence of carbon monoxide, cyanide, and ammonia.

Detail Description Paragraph (60):

Removal of Hydrogen Sulfide in the Presence of Cyanide

Detail Description Paragraph (61):

[0080] This experiment was conducted in the same manner as Example 5. Initial data show that even at 50 ppm loading, cyanide inhibited the growth of ATCC 202177 (FIG. 7), and ATCC 202177 not enriched by cyanide was not capable of removing hydrogen sulfide (FIG. 7). The tolerance of ATCC 202177 to 100 ppm cyanide as potassium cyanide was modified according to the method of Example 5 by enriching ATCC 202177 in TSN medium supplemented with potassium cyanide. The data shown in FIG. 8 show that hydrogen sulfide removal by this enriched ATCC 202177 in the presence of potassium cyanide is not inhibited.

**CLAIMS:**

9. The method according to claim 4, wherein the gas contains cyanides.



**WEST**

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Print

L11: Entry 59 of 62

File: USPT

Jun 28, 1983

DOCUMENT-IDENTIFIER: US 4390620 A

TITLE: Method and composition for the detection and study of cellular activity or the like and means for applying such method

Brief Summary Text (17):

By way of example of organites, may be mentioned viruses, and by way of example of cellular fractions, the mitochondria.

Brief Summary Text (80):

An important application of the method according to the invention consists of the study of the behavior of cellular organisms with respect to the effect of the most varied substances, such as active principles of medicaments or other drugs, and activators or possible inhibitors or cellular metabolism, various regulators of cellular activities, for example membranal regulators, among which antibiotics.

Brief Summary Text (89):

nalidixic acid: inhibition of the synthesis of desoxyribonucleic acid;

Brief Summary Text (92):

polymyxin: alteration of the membrane;

## CLAIMS:

13. The method of claim 1 wherein the cellular fractions are mitochondrial fractions.

92. A composition for monitoring aerobic or anaerobic cells, cellular fractions or organites in a medium, said composition comprising:

(a) an energy substrate capable of promoting the growth of said cells, and

(b) lipoic acid as an electron transporter and oxidoreduction indicator, whereby cellular activity is determined by the proportion of the oxidized and reduced forms of the lipoic acid.

**WEST**

Generate Collection

Print

L17: Entry 16 of 159

File: PGPB

Mar 13, 2003

DOCUMENT-IDENTIFIER: US 20030049278 A1

TITLE: TRANSMISSION BLOCKING VACCINE AGAINST MALARIA

Detail Description Paragraph (21):

[0038] The membrane bound fraction was resuspended in coating buffer (15 mM sodium carbonate, 35 mM sodium bicarbonate, 0.02% w/v sodium azide, pH 9.6) at a final concentration of total protein of 10-20 .mu.g/ml. 100 .mu.l of membrane suspension was added to each well of a polystyrene microtiter plate (Immulon 1, Dynatech Labs, VA) and incubated at 4.degree. C. for 16 hours. The wells were subsequently "blocked" with 1% bovine serum albumin (BSA) in coating buffer.



Division of Microbiological Studies, Food and Drug Administration,  
Washington, DC 20204, USA.

Letters in applied microbiology (ENGLAND) Dec 1995, 21 (6) p345-7,  
ISSN 0266-8254 Journal Code: 8510094

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: BIOTECHNOLOGY

Recovery limits were evaluated for *Campylobacter jejuni* in an existing Food and Drug Administration (FDA) enrichment broth (EB) formula supplemented with Oxyrase enzyme. Cultures of *Camp. jejuni* were inoculated into EB or EB containing 10% raw milk, raw oysters, crabmeat or mushrooms. After 24 and 48 h of enrichment, *Camp. jejuni* was isolated on four selective agars. No significant differences in recovery rates for *Camp. jejuni* were observed in the Oxyrase enrichment under normal atmosphere or in the existing FDA method under modified atmosphere. Increase of enrichment time from 24 to 48 h did not improve the recovery rates. However, the Oxyrase enrichment was cost effective, less time consuming, and simpler to perform than the established method.

Descriptors: \**Campylobacter jejuni*--isolation and purification--IP; \*Food Microbiology; \*Oxygenases; Bacteriological Techniques--economics--EC; Culture Media

CAS Registry No.: 0 (Culture Media)

Enzyme No.: EC 1.13. (Oxygenases); EC 1.14.- (Oxyrase)

Record Date Created: 19960223

Record Date Completed: 19960223

2/9/3 (Item 3 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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10232952 96034262 PMID: 7577355

**Enrichment in Fraser broth supplemented with catalase or Oxyrase, combined with the microcolony immunoblot technique, for detecting heat-injured *Listeria monocytogenes* in foods.**

Patel J R; Beuchat L R

Center for Food Safety and Quality Enhancement, University of Georgia,  
Griffin 30223-1797, USA.

International journal of food microbiology (NETHERLANDS) Jul 1995, 26

(2) p165-76, ISSN 0168-1605 Journal Code: 8412849

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

The microcolony immunoblot technique using monoclonal antibodies to *Listeria monocytogenes* was evaluated for its suitability to detect heat-injured cells. Pasteurized milk and filtrates of homogenized raw ground beef slurry and cabbage were inoculated with *L. monocytogenes* Scott A, heated, diluted, inoculated into Fraser broth (FB) supplemented with 400 micrograms of catalase ml<sup>-1</sup> or 0.01 unit of Oxyrase ml<sup>-1</sup>, and incubated at 30 degrees C for 6 h. Three inoculum populations (high, medium, and low) were used. The extent of injury was dependent on the heating menstruum. Forty percent of the cells were injured in beef slurry filtrate, whereas 79 and 94% were injured in milk and cabbage filtrate, respectively, when foods were heated at 52 degrees C for 20 min. Populations of viable cells were determined using the immunoblot technique and by surface plating on modified Oxford (mMOX) agar. Recovery of cells from heated foods was enhanced in FB supplemented with catalase or Oxyrase compared to recovery in control broth. Essentially all unheated (control) cells could be detected within about 30 h using enrichment and the immunoblot technique; 54 h were required to easily detect colonies on mMOX. In most cases, the number of cells detected in heated milk or filtrates of homogenized beef after enrichment in FB supplemented with catalase or Oxyrase was significantly higher than populations detected using unsupplemented FB; however, enrichment in FB supplemented with catalase or Oxyrase did not significantly increase cell populations in heated cabbage filtrate. Within

susceptibility test medium, antibiotic, and enzyme substrates into the upper level of a biplate. Plates were covered with a Brewer lid and incubated in ambient air. With azithromycin, Oxyrase yielded an MIC for 50% of strains tested (MIC50) and MIC90 of 2.0 and 8.0 micrograms/ml, compared to 8.0 and > 32.0 micrograms/ml in standard anaerobic conditions. At a breakpoint of 8.0 micrograms/ml, 90.4% of strains were susceptible to azithromycin with Oxyrase, compared to 53.2% in the chamber. The corresponding erythromycin MIC50 and MIC90 were 1.0 and 8.0 micrograms/ml with Oxyrase, compared to 4.0 and > 32.0 micrograms/ml by the reference method, with 89.3% of strains susceptible at a breakpoint of 4 micrograms/ml with Oxyrase, compared to 60.6% in CO2. Exclusion of CO2 from the anaerobic atmosphere when testing for susceptibility to azalides and macrolides yielded lower MICs, which may lead to a reconsideration of the role played by these compounds in treatment of infections caused by these strains.

Tags: Comparative Study; Human; Support, Non-U.S. Gov't

Descriptors: \*Bacteria, Anaerobic--drug effects--DE; \*Microbial Sensitivity Tests--methods--MT; \*Oxygenases; Anaerobiosis; Azithromycin; Bacteria, Anaerobic--isolation and purification--IP; Carbon Dioxide; Drug Resistance, Microbial; Erythromycin--analogs and derivatives--AA; Erythromycin--pharmacology--PD; Evaluation Studies

CAS Registry No.: 114-07-8 (Erythromycin); 124-38-9 (Carbon Dioxide); 83905-01-5 (Azithromycin)

Enzyme No.: EC 1.13. (Oxygenases); EC 1.14.- (Oxyrase)

Record Date Created: 19930316

Record Date Completed: 19930316

2/9/19 (Item 2 from file: 160)

DIALOG(R)File 160:Gale Group PROMT(R)

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01966019

**The OXYRASE (TM) Enzyme System is a novel biocatalyst that is capable of partially or completely removing dissolved oxygen in minutes.**

News Release March, 1988 p. 1

The OXYRASE (TM) Enzyme System is a novel biocatalyst that is capable of partially or completely removing dissolved oxygen in minutes. As a very job-specific enzyme system, OXYRASE reduces only dissolved oxygen; whereas, non-specific chemical reducing agents have undesirable effects because of side reactions. As a result, OXYRASE provides researchers with greater control over experimental conditions for creating and maintaining anaerobic environments. Researchers are continually finding new uses for OXYRASE technology in a wide range of applications. One application for this product is isolating and cultivating anaerobic microorganisms. With the OXYRASE Enzyme System, working with anaerobic microorganisms is now faster, easier, and more economical than ever before. As little as 1.0ml to 2.0ml of OXYRASE can prepare 1 liter of medium for growing anaerobic microorganisms at a cost as low as \$3.00 per liter of medium.

Full text available on PTS New Product Announcements.

COMPANY:

\*Oxyrase

PRODUCT: \*Enzymes for Synthesis (2831640)

EVENT: \*Product Design & Development (33)

COUNTRY: \*United States (1USA)

2/9/20 (Item 1 from file: 35)

DIALOG(R)File 35:Dissertation Abs Online

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01400875 ORDER NO: AAD95-07235

**DEVELOPMENT OF A SIMPLE, SENSITIVE, RAPID PROCEDURE FOR DETECTING HEAT-INJURED LISTERIA MONOCYTOGENES IN FOODS ( OXYRASE )**

Author: PATEL, JITENDRAKUMAR RAMANBHAI

Degree: PH.D.

Year: 1994  
Corporate Source/Institution: UNIVERSITY OF GEORGIA (0077)  
Director: LARRY R. BEUCHAT  
Source: VOLUME 55/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL.  
PAGE 4190. 112 PAGES  
Descriptors: AGRICULTURE, FOOD SCIENCE AND TECHNOLOGY  
Descriptor Codes: 0359

The recovery of heat-injured *Listeria monocytogenes* Scott A in Fraser broth (FB) supplemented with sodium thioglycolate, sodium pyruvate, L-(+)-cysteine HCl, catalase or Oxyrase<sup>®</sup> was studied. All oxygen scavengers enhanced the recovery of *L. monocytogenes* in FB within 6 h of incubation. After 6 h of incubation at 30°C, 49% and 55% of injured cells underwent resuscitation in FB containing 2.5 mg of sodium pyruvate ml<sup>-1</sup> and 400  $\mu$ g catalase ml<sup>-1</sup>, respectively, compared to 24% resuscitation in FB not supplemented with oxygen scavengers. Nearly all injured cells were recovered within 24 h of incubation, regardless of supplementation of oxygen scavengers. FB containing 2.5 mg sodium pyruvate ml<sup>-1</sup>, 400  $\mu$ g catalase ml<sup>-1</sup>, or 0.01 unit of Oxyrase<sup>®</sup> ml<sup>-1</sup> was evaluated to determine the optimal incubation temperature for recovering heat-injured *L. monocytogenes*. The percentage recovery of injured cells increased with an increase in temperature of incubation from 25°C to 30°C and 30°C to 35°C. Supplementation of FB with catalase (400  $\mu$ g ml<sup>-1</sup>) or Oxyrase<sup>®</sup> (0.01 unit ml<sup>-1</sup>) resulted in significantly higher recovery of injured cells from heated whole milk. Enrichment in FB containing catalase or Oxyrase<sup>®</sup> facilitates recovery of heat-injured *L. monocytogenes*. The procedure will reduce enrichment period to 6 h compared to 24 h required for conventional enrichment procedures.

Recovery of *L. monocytogenes* from heated milk, ground beef slurry, and cabbage filtrate were enhanced in FB supplemented with catalase or Oxyrase<sup>®</sup>. The microcolony immunoblot technique using monoclonal antibodies to *L. monocytogenes* was used to detect heat-injured cells that were resuscitated in FB containing catalase or Oxyrase<sup>®</sup>. Nearly all unheated cells could be enumerated within 30 h using enrichment and the immunoblot technique; 54 h were required to easily detect colonies on modified Oxford agar (mMOX). Within each heat treatment and level of inoculum, cell populations detected on mMOX agar after 48 h or using the immunoblot technique after 24 h were not significantly different. The microcolony immunoblot procedure would appear to have good potential for detecting healthy and heat-injured cells of *L. monocytogenes* in foods within 30 h compared to 54 h required in conventional plating.

Populations of heat-injured *L. monocytogenes* cells detected after enrichment in *Listeria* enrichment broth (LEB) were significantly higher than populations detected in modified University of Vermont (MUV) broth, University of Vermont (UVM) broth, or FB. The high buffering capacity of MUV broth did not improve recovery of heat-injured cells. The addition of catalase to enrichment broth significantly improved recovery of injured cells. The catalase-producing ability of three strains of *L. monocytogenes* (Scott A, LCDC 81-861, and Brie-1) was not significantly different. Catalase activity decreased during repair of injured cells. Strain Brie-1, a strain with relatively high catalase activity, exhibited greater resistance to exposure to exogenous hydrogen peroxide compared to other test strains. LEB was superior to MUV broth, UVM broth, and FB for recovering heat-injured *L. monocytogenes* cells. The use of LEB supplemented with catalase would appear to enhance the recovery of heat-injured *L. monocytogenes* from food containing low populations of background microflora. However, its performance in recovering *L. monocytogenes* from various types of foods should be determined before a recommendation on its use can be made.

2/9/21 (Item 2 from file: 35)  
DIALOG(R)File 35:Dissertation Abs Online  
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01328941 ORDER NO: AAD94-02721  
CHARACTERISTICS OF FOOD GRADE MEMBRANE BOUND ENZYMES AND APPLICATIONS IN

**FOOD MICROBIOLOGY AND FOOD SAFETY ( OXYRASE , ESCHERICHIA COLI,  
GLUCONOBACTER OXYDANS, ACETOBACTER XYLINUM)**

Author: TUITHEMWONG, KOORANEE BOONPIRAK

Degree: PH.D.

Year: 1993

Corporate Source/Institution: KANSAS STATE UNIVERSITY (0100)

MAJOR PROFESSOR: DANIEL Y. C. FUNG

Source: VOLUME 54/08-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 3922. 352 PAGES

Descriptors: AGRICULTURE, FOOD SCIENCE AND TECHNOLOGY; BIOLOGY,  
MICROBIOLOGY

Descriptor Codes: 0359; 0410

The oxygen reducing membrane fractions were found in *E. coli* E-8 and in acetic acid producing oxidative bacteria (*Gluconobacter oxydans* and *Acetobacter xylinum*). The maximum activities of membrane fractions were obtained from 24-h old *E. coli* E-8, 24-h old *Gluconobacter*, and 36-h old *Acetobacter* under aerobic growth. Oxyrase was very active using lactate as the hydrogen donor reducing oxygen in 3.5 mL solution completely in 5 min. *E. coli* E-8 membrane fraction depleted oxygen in less than 1 min with formate. *Gluconobacter* and *Acetobacter* were effective with pyruvate (also alcohol) and lactate, respectively. Oxyrase and *E. coli* E-8 membrane fractions were active at basic pH (7.0-9.0) and high temperature (37-45°C) while the acetic acid bacterial membrane fraction were active at acidic pH (5.0-6.0) and moderate temperature (30-40°C). Higher or lower pH and temperature than the optimal ranges resulted in drastic decline in the activity. The membrane fractions were very stable at 10°C.

The membrane fraction significantly stimulated growth of facultative and anaerobic pathogenic bacteria such as *Listeria monocytogenes*, *E. coli* O157:H7, *Salmonella typhimurium*, *Yersinia enterocolitica*, *Clostridium perfringens*, *Campylobacter jejuni*, and *Campylobacter coli*. The stimulatory effect increased as the concentrations of membrane fractions increased. The membrane fraction lowered the detection limit of the bacteria by increasing a faster growth of very small number to the detectable level (10<sup>5</sup>-10<sup>7</sup>/mL).

Oxyrase, *E. coli* E-8 membrane fractions and food grade membrane fractions from the acetic acid bacteria significantly enhanced growth and production formation of many fermented foods (yogurt, buttermilk, wine, beer, bread dough, and summer sausage). The food grade membrane fractions were more suitable for foods not only they originally food producing organisms but they also very active at lower pH which most of food fermentations usually generate.

Membrane fractions contained several dehydrogenase enzymes that responsible to the utilization of dissolved oxygen. The absorption spectra, native gel and SDS gel electrophoreses of both sediments and supernatants from ultracentrifuged samples showed that they contained slightly different patterns and types of proteins leading to having different substrate specificities.

2/9/24 (Item 1 from file: 65)

DIALOG(R)File 65:Inside Conferences

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03130449 INSIDE CONFERENCE ITEM ID: CN033180469

**Susceptibility of Anaerobic Bacteria to Azithromycin Determined by Common Method and in Oxyrase System**

Szoke, I.; Dosa, E.; Nagy, E.

CONFERENCE: International conference on macrolides, azalides, streptogramins, and ketolides-4th

INFECTIOUS DISEASES AND THERAPY SERIES, 2000; (NO) 23 P: 348-355

Marcel Dekker, 2000

ISBN: 0824761391

LANGUAGE: English DOCUMENT TYPE: Conference Selected extended abstracts

CONFERENCE EDITOR(S): Zinner, S. H.

CONFERENCE DATE: Jan 1998 (199801) (199801)

BRITISH LIBRARY ITEM LOCATION: 4478.721800

DESCRIPTORS: macrolides; azalides; streptogramins; ketolides

2/9/25 (Item 2 from file: 65)  
DIALOG(R)File 65:Inside Conferences  
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00324782 INSIDE CONFERENCE ITEM ID: CN003058610

**Novel methods to stimulate growth of food pathogens by oxyrase and related membrane fractions**

Fung, D. Y. C.; Yu, L.; Niroomand, F.; Tuitemwong, K.

CONFERENCE: Rapid methods and automation in microbiology and immunology-  
7th International congress

RAPID METHODS AND AUTOMATION IN MICROBIOLOGY AND IMMUNOLOGY, 1993; 7th

P: 313-318

Intercept, 1994

ISBN: 0946707782

LANGUAGE: English DOCUMENT TYPE: Conference Selected papers

CONFERENCE EDITOR(S): Spencer, R. C.; Wright, E. P.; Newsom, S. W. B.

CONFERENCE LOCATION: London 1993 (199300) (199300)

BRITISH LIBRARY ITEM LOCATION: 7254.445500

NOTE:

Also known as RAMI-93

DESCRIPTORS: microbiology; immunology; RAMI

2/9/30 (Item 1 from file: 10)  
DIALOG(R)File 10:AGRICOLA  
(c) format only 2003 The Dialog Corporation. All rts. reserv.

3095054 91031183 Holding Library: AGL

**Effect of oxyrase enzyme on Listeria monocytogenes and other facultative anaerobes**

Yu, L.S.L. Fung, D.Y.C.

Kansas State University, Manhattan, KS

Trumbull, Conn. : Food & Nutrition Press.

Journal of food safety. 1991. v. 11 (3) p. 163-175.

ISSN: 0149-6085 CODEN: JFSAD

DNAL CALL NO: TP373.5.J62

Language: English

Includes references.

Subfile: OTHER US (NOT EXP STN, EXT, USDA; SINCE 12/76);

Document Type: Article

DESCRIPTORS: food contamination; escherichia coli; salmonella  
typhimurium; streptococcus faecalis; listeria monocytogenes; rapid methods;  
membranes; enzymes;

Section Headings: Q200 FOOD CONTAMINATION AND TOXICOLOGY

2/9/40 (Item 3 from file: 73)  
DIALOG(R)File 73:EMBASE  
(c) 2003 Elsevier Science B.V. All rts. reserv.

07142453 EMBASE No: 1998023699

**Evaluation of supplementation of Oxoid Anaerobe Basal Broth with Oxyrase (R)**

Ralph J.L.

J.L. Ralph, Oxoid Ltd, Wade Road, Basingstoke RG24 8PW United Kingdom

Reviews in Medical Microbiology ( REV. MED. MICROBIOL. ) (United Kingdom)

1997, 8/SUPPL. 1 (S90-S91)

CODEN: RMEME ISSN: 0954-139X

DOCUMENT TYPE: Journal; Conference Paper

LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 5

DEVICE BRAND NAME/MANUFACTURER NAME: LabSystems Bioscreen C/labsystems/  
Finland; Sy Lab Bactrac/sy lab/Austria; Oxoid Anaerobe Basal Broth/oxoid/  
United Kingdom; Oxyrase/oxoid/United Kingdom

DEVICE MANUFACTURER NAMES: labsystems/Finland; sy lab/Austria; oxoid/United

Kingdom

**MEDICAL DESCRIPTORS:**

\*culture medium; \*bacterium culture  
supplementation; anaerobic bacterium; nonhuman; controlled study;  
conference paper; priority journal

**SECTION HEADINGS:**

004 Microbiology: Bacteriology, Mycology, Parasitology and Virology

2/9/41 (Item 4 from file: 73)

DIALOG(R) File 73:EMBASE

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06340432 EMBASE No: 1995370045

**Evaluation of Oxyrase (R) enrichment method for isolation of  
Campylobacter jejuni from inoculated foods**

Tran T.T.

Division of Microbiological Studies, D(HFS-516), US Food/Drug  
Administration, 200 C Street, SW, Washington, DC 20204 United States  
Letters in Applied Microbiology ( LETT. APPL. MICROBIOL. ) (United  
Kingdom) 1995, 21/6 (345-347)

CODEN: LAMIE ISSN: 0266-8254

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Recovery limits were evaluated for *Campylobacter jejuni* in an existing Food and Drug Administration (FDA) enrichment broth (EB) formula supplemented with Oxyrase(R) enzyme. Cultures of *Camp. jejuni* were inoculated into EB or EB containing 10% raw milk, raw oysters, crabmeat or mushrooms. After 24 and 48 h of enrichment, *Camp. jejuni* was isolated on four selective agars. No significant differences in recovery rates for *Camp. jejuni* were observed in the Oxyrase(R) enrichment under normal atmosphere or in the existing FDA method under modified atmosphere. Increase of enrichment time from 24 to 48 h did not improve the recovery rates. However, the Oxyrase(R) enrichment was cost effective, less time consuming, and simpler to perform than the established method.

**MEDICAL DESCRIPTORS:**

\*campylobacter jejuni; \*food contamination  
article; bacterium isolation; culture medium; technique

**SECTION HEADINGS:**

004 Microbiology: Bacteriology, Mycology, Parasitology and Virology

029 Clinical and Experimental Biochemistry

2/9/43 (Item 6 from file: 73)

DIALOG(R) File 73:EMBASE

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05260580 EMBASE No: 1993028665

**Oxyrase , a method which avoids COinf 2 in the incubation atmosphere for  
anaerobic susceptibility testing of antibiotics affected by COinf 2**

Spangler S.K.; Appelbaum P.C.

Department of Pathology, Hershey Medical Center, Hershey, PA 17033 United  
States

Journal of Clinical Microbiology ( J. CLIN. MICROBIOL. ) (United States)  
1993, 31/2 (460-462)

CODEN: JCMID ISSN: 0095-1137

DOCUMENT TYPE: Journal; Note

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The Oxyrase agar dilution method, with exclusion of COinf 2 from the environment, was compared with the reference agar dilution method recommended by the National Committee for Clinical Laboratory Standards (anaerobic chamber with 10% COinf 2) to test the susceptibility of 51 gram-negative and 43 gram-positive anaerobes to azithromycin and erythromycin. With the Oxyrase method, anaerobiosis was achieved by incorporation of the Oinf 2-binding enzyme Oxyrase in addition to susceptibility test medium, antibiotic, and enzyme substrates into the

upper level of a biplate. Plates were covered with a Brewer lid and incubated in ambient air. With azithromycin, Oxyrase yielded an MIC for 50% of strains tested (MIC<sub>50</sub> 0) and MIC<sub>90</sub> 9 of 2.0 and 8.0 mug/ml, compared to 8.0 and >32.0 mug/ml in standard anaerobic conditions. At a breakpoint of 8.0 mug/ml, 90.4% of strains were susceptible to azithromycin with Oxyrase, compared to 53.2% in the chamber. The corresponding erythromycin MIC<sub>50</sub> 0 and MIC<sub>90</sub> 9 were 1.0 and 8.0 mug/ml with Oxyrase, compared to 4.0 and >32.0 mug/ml by the reference method, with 89.3% of strains susceptible at a breakpoint of 4 mug/ml with Oxyrase, compared to 60.6% in CO<sub>2</sub>. Exclusion of CO<sub>2</sub> from the anaerobic atmosphere when testing for susceptibility to azalides and macrolides yielded lower MICs, which may lead to a reconsideration of the role played by these compounds in treatment of infections caused by these strains.

DRUG DESCRIPTORS:

\*azithromycin; \*carbon dioxide; \*erythromycin

MEDICAL DESCRIPTORS:

\*anaerobic growth; \*antibiotic sensitivity; \*atmosphere  
dilution; enzyme substrate; gram negative aerobic rods and cocci; gram positive asporogenous rod-shaped bacteria; minimum inhibitory concentration  
; nonhuman; note; priority journal

CAS REGISTRY NO.: 83905-01-5 (azithromycin); 124-38-9, 58561-67-4 (carbon dioxide); 114-07-8, 70536-18-4 (erythromycin)

SECTION HEADINGS:

004 Microbiology: Bacteriology, Mycology, Parasitology and Virology

2/9/46 (Item 3 from file: 5)

DIALOG(R) File 5: Biosis Previews(R)

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12639946 BIOSIS NO.: 200000393448

Evaluation of Oxyrase -containing media for isolation of Campylobacter jejuni from inoculated ground beef and chicken skin.

AUTHOR: Wonglumsom W(a); Fung D Y C(a)

AUTHOR ADDRESS: (a) Kansas State University, Manhattan, KS\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 100p513 2000

MEDIUM: print

CONFERENCE/MEETING: 100th General Meeting of the American Society for Microbiology Los Angeles, California, USA May 21-25, 2000

SPONSOR: American Society for Microbiology

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

SUMMARY LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Foods; Methods and Techniques

BIOSYSTEMATIC NAMES: Aerobic Helical or Vibrioid Gram-Negatives--

Eubacteria, Bacteria, Microorganisms

ORGANISMS: Campylobacter jejuni (Aerobic Helical or Vibrioid

Gram-Negatives)--food contaminant

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Bacteria; Eubacteria;

Microorganisms

METHODS & EQUIPMENT: Oxyrase-containing media method--food contaminant detection method; gas replacement method--food contaminant detection method

MISCELLANEOUS TERMS: chicken skin--poultry product; ground beef--meat product; Meeting Abstract

CONCEPT CODES:

31000 Physiology and Biochemistry of Bacteria

00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals

13502 Food Technology-General; Methods

13516 Food Technology-Meats and Meat By-Products

13520 Food Technology-Poultry and Eggs

BIOSYSTEMATIC CODES:

06210 Aerobic Helical or Vibrioid Gram-Negatives (1992- )

Ref 10/7/05

2/9/47 (Item 4 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
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12479800 BIOSIS NO.: 200000233302

**A comparison study between Oxyrase anaerobic agar plates and conventional anaerobic method for the enumeration of lactic acid and bifidobacteria from fermented milk.**

AUTHOR: Asperger H(a); Saad Nagah M(a)

AUTHOR ADDRESS: (a)Milk Technology and Food Science, Institute of Milk Hygiene, Veterinary University, Veterinarplatz 1, A 1210, Wien\*\*Austria

JOURNAL: Milchwissenschaft 54 (11):p613-616 1999

ISSN: 0026-3788

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English; German

**ABSTRACT:** The traditional cultural methods to detect and enumerate anaerobic or facultative anaerobic microorganisms need special techniques to prevent antibacterial effects of oxygen during the procedure. Supplementation of media with oxygen reducing membrane fragments (Oxyrase) for detection of anaerobic or facultative anaerobic bacteria was tested for the enumeration of lactic acid bacteria in fermented milk products. In comparison with aerobic and CO<sub>2</sub>-incubation conditions the colony counts on the appropriate media were increased for streptococci only negligible for the lactobacilli slightly. The colony dimension (diameter) of course, which can be seen as a more sensitive indication of better growth conditions, was increased significant with all lactic acid bacteria in comparison with aerobic incubation and in the tendency in comparison with CO<sub>2</sub> incubation.

REGISTRY NUMBERS: 7782-44-7: OXYGEN

DESCRIPTORS:

MAJOR CONCEPTS: Foods; Methods and Techniques

BIOSYSTEMATIC NAMES: Bacteria--Microorganisms; Gram-Positive Cocci--Eubacteria, Bacteria, Microorganisms; Irregular Nonsporing Gram-Positive Rods--Actinomycetes and Related Organisms, Eubacteria, Bacteria, Microorganisms

ORGANISMS: Lactococcus lactis lactis (Gram-Positive Cocci)--fermentation agent; bifidobacteria (Irregular Nonsporing Gram-Positive Rods)--fermentation agent; lactic acid bacteria (Bacteria)--fermentation agent

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Bacteria; Eubacteria; Microorganisms

CHEMICALS & BIOCHEMICALS: oxygen--antibacterial effects

METHODS & EQUIPMENT: Oxyrase anaerobic agar plate method--analytical method; conventional anaerobic method--analytical method

MISCELLANEOUS TERMS: fermented milk--dairy product

CONCEPT CODES:

39008 Food and Industrial Microbiology-General and Miscellaneous  
10060 Biochemical Studies-General  
13502 Food Technology-General; Methods

BIOSYSTEMATIC CODES:

05000 Bacteria-General Unspecified (1992- )  
07700 Gram-Positive Cocci (1992- )  
08890 Irregular Nonsporing Gram-Positive Rods (1992- )  
98000 98000 entry not found

2/9/48 (Item 5 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
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12048028 BIOSIS NO.: 199900328547

**Effect of medium volume on the growth of Campylobacter jejuni in Oxyrase (R)-containing broth.**

AUTHOR: Wonglumsom W(a); Fung DYC(a)



AUTHOR ADDRESS: (a)Kansas State University, Manhattan, KS\*\*USA  
JOURNAL: Abstracts of the General Meeting of the American Society for  
Microbiology 99p529-530 1999  
CONFERENCE/MEETING: 99th General Meeting of the American Society for  
Microbiology Chicago, Illinois, USA May 30-June 3, 1999  
SPONSOR: American Society for Microbiology  
ISSN: 1060-2011  
RECORD TYPE: Citation  
LANGUAGE: English  
DESCRIPTORS:

MAJOR CONCEPTS: Infection; Methods and Techniques  
BIOSYSTEMATIC NAMES: Aerobic Helical or Vibrioid Gram-Negatives--  
Eubacteria, Bacteria, Microorganisms  
ORGANISMS: Campylobacter jejuni (Aerobic Helical or Vibrioid  
Gram-Negatives)--growth, pathogen  
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Bacteria; Eubacteria;  
Microorganisms  
CHEMICALS & BIOCHEMICALS: dissolved oxygen; Oxyrase  
METHODS & EQUIPMENT: bacteria recovery method--microbiological method  
MISCELLANEOUS TERMS: culture medium volume effect; Meeting Abstract;  
Meeting Poster; Oxyrase-containing Hunt broth--culture medium  
CONCEPT CODES:  
36001 Medical and Clinical Microbiology-General; Methods and Techniques  
10060 Biochemical Studies-General  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
BIOSYSTEMATIC CODES:  
06210 Aerobic Helical or Vibrioid Gram-Negatives (1992- )

2/9/49 (Item 6 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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11636119 BIOSIS NO.: 199800417850  
**Effect of Oxyrase on the recovery of bifidobacteria from untreated waste  
water.**

AUTHOR: Koonce M; Ting W-T E  
AUTHOR ADDRESS: Purdue Univ. Calumet, Hammond, IN\*\*USA  
JOURNAL: Abstracts of the General Meeting of the American Society for  
Microbiology 98p443 1998  
CONFERENCE/MEETING: 98th General Meeting of the American Society for  
Microbiology Atlanta, Georgia, USA May 17-21, 1998  
SPONSOR: American Society for Microbiology  
ISSN: 1060-2011  
RECORD TYPE: Citation  
LANGUAGE: English  
REGISTRY NUMBERS: 7782-44-7: OXYGEN  
DESCRIPTORS:

MAJOR CONCEPTS: Bacteriology; Waste Management (Sanitation)  
BIOSYSTEMATIC NAMES: Irregular Nonsporing Gram-Positive Rods--  
Actinomycetes and Related Organisms, Eubacteria, Bacteria,  
Microorganisms  
ORGANISMS: bifidobacteria (Irregular Nonsporing Gram-Positive Rods)  
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Bacteria; Eubacteria;  
Microorganisms  
CHEMICALS & BIOCHEMICALS: Oxyrase--biocatalytic oxygen-reducing agent  
MISCELLANEOUS TERMS: waste water--untreated; Meeting Abstract;  
Meeting Poster  
CONCEPT CODES:  
37001 Public Health-General and Miscellaneous  
10060 Biochemical Studies-General  
30000 Bacteriology, General and Systematic  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
BIOSYSTEMATIC CODES:  
08890 Irregular Nonsporing Gram-Positive Rods (1992- )

2/9/51 (Item 8 from file: 5)  
DIALOG(R) File 5: Biosis Previews(R)  
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11328063 BIOSIS NO.: 199800109395

**Effects on motility and aster formation of mouse spermatozoa from a reduction in oxygen concentration by oxyrase, an Escherichia coli membrane preparation.**

AUTHOR: Kressin M D(a); Schreuders P D; Mazur P(a)

AUTHOR ADDRESS: (a) Life Sci. Div., Oak Ridge Natl. Lab., Oak Ridge, TN 37831-8080\*\*USA

JOURNAL: Cryobiology 35 (4):p353 Dec., 1997

CONFERENCE/MEETING: Thirty-fourth Annual Meeting of the Society for Cryobiology Barcelona, Spain June 8-12, 1997

SPONSOR: Society for Cryobiology

ISSN: 0011-2240

RECORD TYPE: Citation

LANGUAGE: English

REGISTRY NUMBERS: 7782-44-7: OXYGEN

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Development; Reproductive System (Reproduction)

BIOSYSTEMATIC NAMES: Muridae--Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGANISMS: mouse (Muridae)

ORGANISMS: PARTS ETC: spermatozoa--aster formation, motility, reproductive system

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Rodents; Vertebrates

CHEMICALS & BIOCHEMICALS: oxyrase--Escherichia-coli membrane preparation, oxygen concentration reduction

MISCELLANEOUS TERMS: cryobiology; Meeting Abstract

CONCEPT CODES:

16502 Reproductive System-Anatomy

02506 Cytology and Cytochemistry-Animal

03506 Genetics and Cytogenetics-Animal

10616 External Effects-Temperature as a Primary Variable-Cold (1971- )

10808 Enzymes-Physiological Studies

23001 Temperature: Its Measurement, Effects and Regulation-General Measurement and Methods

23004 Temperature: Its Measurement, Effects and Regulation-Cryobiology

00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals

31000 Physiology and Biochemistry of Bacteria

32600 In Vitro Studies, Cellular and Subcellular

BIOSYSTEMATIC CODES:

86375 Muridae

2/9/52 (Item 9 from file: 5)  
DIALOG(R) File 5: Biosis Previews(R)  
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10962220 BIOSIS NO.: 199799583365

**Recovery and toxin production of Clostridium botulinum in Oxyrase supplemented culture media.**

AUTHOR: Wong P C K

AUTHOR ADDRESS: U.S. FDA, Los Angeles, CA\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 97 (0):p448 1997

CONFERENCE/MEETING: 97th General Meeting of the American Society for Microbiology Miami Beach, Florida, USA May 4-8, 1997

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Bioprocess Engineering; Enzymology (Biochemistry and Molecular Biophysics); Genetics; Metabolism; Systematics and Taxonomy; Toxicology

BIOSYSTEMATIC NAMES: Endospore-forming Gram-Positives--Eubacteria,  
 Bacteria; Enterobacteriaceae--Eubacteria, Bacteria  
 ORGANISMS: endospore-forming gram-positive rods and cocci  
 (Endospore-forming Gram-Positives); Clostridium botulinum  
 (Endospore-forming Gram-Positives); Escherichia coli  
 (Enterobacteriaceae)  
 BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
 microorganisms  
 MISCELLANEOUS TERMS: Meeting Abstract; Meeting Poster;  
 BACTERIAL-MEMBRANE BOUND FRACTION; COOKED; CULTURE MEDIA SUPPLEMENT;  
 CULTURE METHOD; E. COLI; FOOD CONTAMINATION; FOOD SPOILAGE; FOODS;  
 GASPAK ANAEROBIC JAR SYSTEM; MEAT; MICROBIOLOGICAL METHOD; OXYRASE;  
 PRODUCTION; STRAIN-TYPE A; STRAIN-TYPE B; STRAIN-TYPE E; STRAIN-TYPE F;  
 TOXICOLOGY; TOXIN  
 CONCEPT CODES:  
 10060 Biochemical Studies-General  
 10802 Enzymes-General and Comparative Studies; Coenzymes  
 13002 Metabolism-General Metabolism; Metabolic Pathways  
 22501 Toxicology-General; Methods and Experimental  
 30000 Bacteriology, General and Systematic  
 31500 Genetics of Bacteria and Viruses  
 39008 Food and Industrial Microbiology-General and Miscellaneous  
 00520 General Biology-Symposia, Transactions and Proceedings of  
 Conferences, Congresses, Review Annuals  
 BIOSYSTEMATIC CODES:  
 06702 Enterobacteriaceae (1992- )  
 07810 Endospore-forming Gram-Positives (1992- )

2/9/53 (Item 10 from file: 5)  
 DIALOG(R)File 5:Biosis Previews(R)  
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10361758 BIOSIS NO.: 199698816676  
**Effect of supplemented ferrioxamine E and oxyrase on the growth of**  
**foodborne pathogen.**  
 AUTHOR: Vichienroj K; Fung D Y C  
 AUTHOR ADDRESS: Kansas State Univ., Manhattan, KS 66506\*\*USA  
 JOURNAL: Abstracts of the General Meeting of the American Society for  
 Microbiology 96 (0):p382 1996  
 CONFERENCE/MEETING: 96th General Meeting of the American Society for  
 Microbiology New Orleans, Louisiana, USA May 19-23, 1996  
 ISSN: 1060-2011  
 RECORD TYPE: Citation  
 LANGUAGE: English  
 REGISTRY NUMBERS: 20008-20-2: FERRIOXAMINE E  
 DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Development;  
 Enzymology (Biochemistry and Molecular Biophysics); Foods; Infection;  
 Physiology  
 BIOSYSTEMATIC NAMES: Endospore-forming Gram-Positives--Eubacteria,  
 Bacteria; Enterobacteriaceae--Eubacteria, Bacteria; Pseudomonadaceae--  
 Eubacteria, Bacteria; Regular Nonsporing Gram-Positive Rods--Eubacteria  
 , Bacteria  
 ORGANISMS: endospore-forming gram-positive rods and cocci  
 (Endospore-forming Gram-Positives); regular nonsporing gram-positive  
 rods (Regular Nonsporing Gram-Positive Rods); Clostridium perfringens  
 (Endospore-forming Gram-Positives); Escherichia coli  
 (Enterobacteriaceae); Listeria monocytogenes (Regular Nonsporing  
 Gram-Positive Rods); Pseudomonas (Pseudomonadaceae); Salmonella  
 typhimurium (Enterobacteriaceae); Yersinia enterocolitica  
 (Enterobacteriaceae)  
 BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
 microorganisms  
 CHEMICALS & BIOCHEMICALS: FERRIOXAMINE E  
 MISCELLANEOUS TERMS: BACTERIAL IDENTIFICATION; FOOD CONTAMINATION;  
 MEETING ABSTRACT  
 CONCEPT CODES:  
 10506 Biophysics-Molecular Properties and Macromolecules

10806 Enzymes-Chemical and Physical  
 25508 Developmental Biology-Embryology-Morphogenesis, General  
 31000 Physiology and Biochemistry of Bacteria  
 36002 Medical and Clinical Microbiology-Bacteriology  
 39002 Food and Industrial Microbiology-Food and Beverage Spoilage and Contamination  
 00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals  
 10060 Biochemical Studies-General  
 10064 Biochemical Studies-Proteins, Peptides and Amino Acids

BIOSYSTEMATIC CODES:

06508 Pseudomonadaceae (1992- )  
 06702 Enterobacteriaceae (1992- )  
 07810 Endospore-forming Gram-Positives (1992- )  
 07830 Regular Nonsporing Gram-Positive Rods (1992- )

2/9/54 (Item 11 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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10359947 BIOSIS NO.: 199698814865

**Evaluation of in-vitro activity of novel compounds against selected anaerobes using oxyrase -supplemented broth in a microdilution format.**

AUTHOR: Humble D J; Van Dalfsen J M; Shawar R M

AUTHOR ADDRESS: PathoGenesis Corp., Seattle, WA\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 96 (0):p58 1996

CONFERENCE/MEETING: 96th General Meeting of the American Society for Microbiology New Orleans, Louisiana, USA May 19-23, 1996

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Infection; Pharmacology

BIOSYSTEMATIC NAMES: Bacteroidaceae--Eubacteria, Bacteria;

Endospore-forming Gram-Positives--Eubacteria, Bacteria; Gram-Positive Cocci--Eubacteria, Bacteria; Hominidae--Primates, Mammalia, Vertebrata, Chordata, Animalia; Irregular Nonsporing Gram-Positive Rods--Eubacteria, Bacteria

ORGANISMS: endospore-forming gram-positive rods and cocci

(Endospore-forming Gram-Positives); gram-positive cocci (Gram-Positive Cocci); irregular nonsporing gram-positive rods (Irregular Nonsporing Gram-Positive Rods); Bacteroides thetaiotaomicron (Bacteroidaceae); Clostridium difficile (Endospore-forming Gram-Positives); Clostridium perfringens (Endospore-forming Gram-Positives); Eubacterium lentum (Irregular Nonsporing Gram-Positive Rods); Hominidae (Hominidae); Peptostreptococcus magnus (Gram-Positive Cocci)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; bacteria; chordates; eubacteria; humans; mammals; microorganisms; primates; vertebrates

MISCELLANEOUS TERMS: ANTIBIOTICS; MEETING ABSTRACT; MINIMUM INHIBITORY CONCENTRATION

CONCEPT CODES:

22005 Pharmacology-Clinical Pharmacology (1972- )  
 36002 Medical and Clinical Microbiology-Bacteriology  
 38504 Chemotherapy-Antibacterial Agents  
 00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals  
 10060 Biochemical Studies-General  
 10064 Biochemical Studies-Proteins, Peptides and Amino Acids  
 10804 Enzymes-Methods  
 12512 Pathology, General and Miscellaneous-Therapy (1971- )  
 32000 Microbiological Apparatus, Methods and Media  
 32600 In Vitro Studies, Cellular and Subcellular

BIOSYSTEMATIC CODES:

06901 Bacteroidaceae (1992- )  
 07700 Gram-Positive Cocci (1992- )  
 07810 Endospore-forming Gram-Positives (1992- )  
 08890 Irregular Nonsporing Gram-Positive Rods (1992- )

86215 Hominidae

2/9/55 (Item 12 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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10359853 BIOSIS NO.: 199698814771

**A comparison study between Oxyrase anaerobic agar plates and conventional anaerobic glove chamber for the isolation and identification of anaerobic bacteria from clinical wound infections.**

AUTHOR: Gannon C; Thurston M

AUTHOR ADDRESS: Mid-Michigan Regional Med. Cent., Midland, MI\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 96 (0):p41 1996

CONFERENCE/MEETING: 96th General Meeting of the American Society for Microbiology New Orleans, Louisiana, USA May 19-23, 1996

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

REGISTRY NUMBERS: 9002-18-0: AGAR

DESCRIPTORS:

MAJOR CONCEPTS: Infection; Methods and Techniques; Pathology; Skeletal System (Movement and Support)

BIOSYSTEMATIC NAMES: Gram-Positive Cocci--Eubacteria, Bacteria; Hominidae --Primates, Mammalia, Vertebrata, Chordata, Animalia; Irregular Nonsporing Gram-Positive Rods--Eubacteria, Bacteria

ORGANISMS: gram-positive cocci (Gram-Positive Cocci); human (Hominidae); irregular nonsporing gram-positive rods (Irregular Nonsporing Gram-Positive Rods); Eubacterium (Irregular Nonsporing Gram-Positive Rods); Peptostreptococcus (Gram-Positive Cocci); Propionibacterium (Irregular Nonsporing Gram-Positive Rods)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): animals; bacteria; chordates; eubacteria; humans; mammals; microorganisms; primates; vertebrates

CHEMICALS & BIOCHEMICALS: AGAR

MISCELLANEOUS TERMS: DIAGNOSTIC METHODS COMPARISON; MEETING ABSTRACT

CONCEPT CODES:

12504 Pathology, General and Miscellaneous-Diagnostic  
18006 Bones, Joints, Fasciae, Connective and Adipose Tissue-Pathology  
32000 Microbiological Apparatus, Methods and Media  
36002 Medical and Clinical Microbiology-Bacteriology  
00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals

BIOSYSTEMATIC CODES:

07700 Gram-Positive Cocci (1992- )  
08890 Irregular Nonsporing Gram-Positive Rods (1992- )  
86215 Hominidae

2/9/56 (Item 13 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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09849077 BIOSIS NO.: 199598303995

**Influence of oxyrase on the microdilution susceptibility testing of B. fragilis to five antimicrobials.**

AUTHOR: Banevicius M A; Epp E; Nightingale C H; Nicolau D P

AUTHOR ADDRESS: Hartford Hosp., Hartford, CT 06102\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 95 (0):p63 1995

CONFERENCE/MEETING: 95th General Meeting of the American Society for Microbiology Washington, D.C., USA May 21-25, 1995

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

REGISTRY NUMBERS: 18323-44-9: CLINDAMYCIN; 443-48-1: METRONIDAZOLE;

61477-96-1: PIPERACILLIN; 89786-04-9: TAZOBACTAM; 35607-66-0: CEFOTITIN  
; 69712-56-7: CEFOTETAN

DESCRIPTORS:

MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics);  
Infection; Methods and Techniques; Pharmacology  
BIOSYSTEMATIC NAMES: Bacteroidaceae--Eubacteria, Bacteria  
ORGANISMS: Bacteroides fragilis (Bacteroidaceae)  
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
microorganisms  
CHEMICALS & BIOCHEMICALS: CLINDAMYCIN; METRONIDAZOLE; PIPERACILLIN;  
TAZOBACTAM; CEFOXITIN; CEFOTETAN  
MISCELLANEOUS TERMS: CEFOTETAN; CEFOXITIN; CLINDAMYCIN; MEETING  
ABSTRACT; METRONIDAZOLE; PIPERACILLIN; TAZOBACTAM

CONCEPT CODES:

10808 Enzymes-Physiological Studies  
32000 Microbiological Apparatus, Methods and Media  
36002 Medical and Clinical Microbiology-Bacteriology  
38504 Chemotherapy-Antibacterial Agents  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10060 Biochemical Studies-General  
10064 Biochemical Studies-Proteins, Peptides and Amino Acids

BIOSYSTEMATIC CODES:

06901 Bacteroidaceae (1992- )

2/9/57 (Item 14 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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09430914 BIOSIS NO.: 199497439284

**Aerobic microtiter MIC testing of anaerobes using oxyrase : A multicenter study.**

AUTHOR: Rippin K P(a); Hall G S(a); Washington J A(a); Thomson R B; Brown W J; Kostecky B F; Moosavi S A; Copeland J C

AUTHOR ADDRESS: (a)Cleveland Clin. Found., Cleveland, OH\*\*USA

JOURNAL: Program and Abstracts of the Interscience Conference on  
Antimicrobial Agents and Chemotherapy 33 (0):p169 1993

CONFERENCE/MEETING: 33rd Interscience Conference on Antimicrobial Agents  
and Chemotherapy New Orleans, Louisiana, USA October 17-20, 1993

ISSN: 0733-6373

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Enzymology  
(Biochemistry and Molecular Biophysics); Infection; Metabolism; Methods  
and Techniques; Pharmacology; Physiology  
BIOSYSTEMATIC NAMES: Bacteria-General Unspecified--Eubacteria, Bacteria  
ORGANISMS: bacteria (Bacteria - General Unspecified)  
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
microorganisms  
MISCELLANEOUS TERMS: ANTIBIOTICS; CHEMOTHERAPY; ENZYME SYSTEM; MEDIA;  
MEETING ABSTRACT; MEETING POSTER; MINIMUM INHIBITORY CONCENTRATION

CONCEPT CODES:

10010 Comparative Biochemistry, General  
10012 Biochemistry-Gases (1970- )  
10050 Biochemical Methods-General  
10054 Biochemical Methods-Proteins, Peptides and Amino Acids  
10060 Biochemical Studies-General  
10804 Enzymes-Methods  
10806 Enzymes-Chemical and Physical  
10808 Enzymes-Physiological Studies  
13003 Metabolism-Energy and Respiratory Metabolism  
22002 Pharmacology-General  
22005 Pharmacology-Clinical Pharmacology (1972- )  
31000 Physiology and Biochemistry of Bacteria  
32000 Microbiological Apparatus, Methods and Media  
36001 Medical and Clinical Microbiology-General; Methods and Techniques  
36002 Medical and Clinical Microbiology-Bacteriology  
38504 Chemotherapy-Antibacterial Agents  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals

BIOSYSTEMATIC CODES:

05000 Bacteria-General Unspecified (1992- )

2/9/58 (Item 15 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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09430894 BIOSIS NO.: 199497439264

**Susceptibility of 119 anaerobes to erythromycin, azithromycin, clarithromycin and roxithromycin by the oxyrase method.**

AUTHOR: Spangler S K(a); Jacobs M R; Appelbaum P C

AUTHOR ADDRESS: (a) Hershey Med. Cent., Hershey, PA\*\*USA

JOURNAL: Program and Abstracts of the Interscience Conference on Antimicrobial Agents and Chemotherapy 33 (0):p165 1993

CONFERENCE/MEETING: 33rd Interscience Conference on Antimicrobial Agents and Chemotherapy New Orleans, Louisiana, USA October 17-20, 1993

ISSN: 0733-6373

RECORD TYPE: Citation

LANGUAGE: English

REGISTRY NUMBERS: 114-07-8: ERYTHROMYCIN; 83905-01-5: AZITHROMYCIN;

81103-11-9: CLARITHROMYCIN; 80214-83-1: ROXITHROMYCIN

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Genetics; Infection; Methods and Techniques; Pathology; Pharmacology; Physiology

BIOSYSTEMATIC NAMES: Bacteria-General Unspecified--Eubacteria, Bacteria

ORGANISMS: bacteria (Bacteria - General Unspecified)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria; microorganisms

CHEMICALS & BIOCHEMICALS: ERYTHROMYCIN; AZITHROMYCIN; CLARITHROMYCIN; ROXITHROMYCIN

MISCELLANEOUS TERMS: ANTIBACTERIAL-DRUG; ANTIBIOTICS; AZITHROMYCIN; CHEMOTHERAPY; CLARITHROMYCIN; ERYTHROMYCIN; MEETING ABSTRACT; MEETING POSTER; MINIMUM INHIBITORY CONCENTRATIONS; ROXITHROMYCIN

CONCEPT CODES:

10050 Biochemical Methods-General  
10060 Biochemical Studies-General  
10804 Enzymes-Methods  
12512 Pathology, General and Miscellaneous-Therapy (1971- )  
22002 Pharmacology-General  
22005 Pharmacology-Clinical Pharmacology (1972- )  
31000 Physiology and Biochemistry of Bacteria  
31500 Genetics of Bacteria and Viruses  
32000 Microbiological Apparatus, Methods and Media  
36001 Medical and Clinical Microbiology-General; Methods and Techniques  
36002 Medical and Clinical Microbiology-Bacteriology  
38504 Chemotherapy-Antibacterial Agents  
00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals

BIOSYSTEMATIC CODES:

05000 Bacteria-General Unspecified (1992- )

2/9/59 (Item 16 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

09336781 BIOSIS NO.: 199497345151

**Effect of Oxyrase enzyme on the growth of Bacteroides fragilis and Clostridium perfringens under aerobic incubation.**

AUTHOR: Kone K; Fung D Y C

AUTHOR ADDRESS: Kansas State University, Manhattan, KS\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 94 (0):p372 1994

CONFERENCE/MEETING: 94th General Meeting of the American Society for Microbiology Las Vegas, Nevada, USA May 23-27, 1994

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Enzymology  
(Biochemistry and Molecular Biophysics); Physiology

BIOSYSTEMATIC NAMES: Bacteroidaceae--Eubacteria, Bacteria;

Endospore-forming Gram-Positives--Eubacteria, Bacteria

ORGANISMS: endospore-forming gram-positive rods and cocci  
(Endospore-forming Gram-Positives); Bacteroides fragilis

(Bacteroidaceae); Clostridium perfringens (Endospore-forming  
Gram-Positives)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
microorganisms

MISCELLANEOUS TERMS: MEETING ABSTRACT; OXYGEN-SCAVENGER ENZYME

CONCEPT CODES:

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

10808 Enzymes-Physiological Studies

31000 Physiology and Biochemistry of Bacteria

00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals

BIOSYSTEMATIC CODES:

06901 Bacteroidaceae (1992- )

07810 Endospore-forming Gram-Positives (1992- )

2/9/61 (Item 18 from file: 5)

DIALOG(R) File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

09336769 BIOSIS NO.: 199497345139

**Oxybase-TM enrichment broth supplemented with the enzyme oxyrase -TM for  
detection of campylobacter species in shellfish.**

AUTHOR: Abeyta C Jr; Bark D; Hunt J; Kaysner C; Trost P; Wekell M

AUTHOR ADDRESS: FDA, Seafood Products Res. Center, Bothell, WA\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for  
Microbiology 94 (0):p370 1994

CONFERENCE/MEETING: 94th General Meeting of the American Society for  
Microbiology Las Vegas, Nevada, USA May 23-27, 1994

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics); Foods  
; Methods and Techniques

BIOSYSTEMATIC NAMES: Aerobic Helical or Vibrionid Gram-Negatives--  
Eubacteria, Bacteria

ORGANISMS: aerobic helical or vibrioid gram-negative bacteria (Aerobic  
Helical or Vibrionid Gram-Negatives); Campylobacter coli (Aerobic  
Helical or Vibrionid Gram-Negatives); Campylobacter jejuni (Aerobic  
Helical or Vibrionid Gram-Negatives)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
microorganisms

MISCELLANEOUS TERMS: FOOD CONTAMINATION; MEETING ABSTRACT; METHOD;  
STRESSED CELLS

CONCEPT CODES:

10808 Enzymes-Physiological Studies

13502 Food Technology-General; Methods

13522 Food Technology-Fish and Other Marine and Freshwater Products

13530 Food Technology-Evaluations of Physical and Chemical Properties  
(1970- )

32000 Microbiological Apparatus, Methods and Media

39002 Food and Industrial Microbiology-Food and Beverage Spoilage and  
Contamination

00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

BIOSYSTEMATIC CODES:

06210 Aerobic Helical or Vibrionid Gram-Negatives (1992- )



2/9/62 (Item 19 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

09336768 BIOSIS NO.: 199497345138

**Use of universal preenrichment medium supplemented with oxyrase for the simultaneous recovery of Escherichia coli O157:H7 and Yersinia enterocolitica.**

AUTHOR: Thippareddi H; Phebus R K; Fung D Y C; Kastner C L

AUTHOR ADDRESS: Kansas State University, Manhattan, KS 66506\*\*USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 94 (0):p370 1994

CONFERENCE/MEETING: 94th General Meeting of the American Society for Microbiology Las Vegas, Nevada, USA May 23-27, 1994

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Enzymology (Biochemistry and Molecular Biophysics); Foods ; Infection; Methods and Techniques

BIOSYSTEMATIC NAMES: Enterobacteriaceae--Eubacteria, Bacteria

ORGANISMS: Escherichia coli (Enterobacteriaceae); Yersinia enterocolitica (Enterobacteriaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria; microorganisms

MISCELLANEOUS TERMS: FOOD-BORNE PATHOGENS; INJURED PATHOGEN RECOVERY; MEETING ABSTRACT; METHOD

CONCEPT CODES:

10808 Enzymes-Physiological Studies

13502 Food Technology-General; Methods

13530 Food Technology-Evaluations of Physical and Chemical Properties (1970- )

32000 Microbiological Apparatus, Methods and Media

36002 Medical and Clinical Microbiology-Bacteriology

39002 Food and Industrial Microbiology-Food and Beverage Spoilage and Contamination

00520 General Biology-Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

BIOSYSTEMATIC CODES:

06702 Enterobacteriaceae (1992- )

2/9/64 (Item 21 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

08630243 BIOSIS NO.: 199345048318

**Practical application of Brucella oxyrase enrichment procedure and its comparison with Doyle and Roman enrichment procedure.**

AUTHOR: Niroomand F; Fung D Y C

AUTHOR ADDRESS: Kansas State Univ., Manhattan, KS 66506\*\*

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 93 (0):p332 1993

CONFERENCE/MEETING: 93rd General Meeting of the American Society for Microbiology Atlanta, Georgia, USA May 16-20, 1993

ISSN: 1060-2011

RECORD TYPE: Citation

LANGUAGE: English

DESCRIPTORS:

MAJOR CONCEPTS: Foods; Infection; Methods and Techniques

BIOSYSTEMATIC NAMES: Aerobic Helical or Vibrionid Gram-Negatives--Eubacteria, Bacteria; Gram-Negative Aerobic Rods and Cocci--Eubacteria, Bacteria

ORGANISMS: aerobic helical or vibrioid gram-negative bacteria (Aerobic Helical or Vibrionid Gram-Negatives); gram-negative aerobic rods and cocci (Gram-Negative Aerobic Rods and Cocci); Brucella (Gram-Negative Aerobic Rods and Cocci); Campylobacter (Aerobic Helical or Vibrionid Gram-Negatives)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): bacteria; eubacteria;  
microorganisms

MISCELLANEOUS TERMS: ABSTRACT; GROUND BEEF; GROUND PORK; METHOD  
CONCEPT CODES:

13516 Food Technology-Meats and Meat By-Products  
32000 Microbiological Apparatus, Methods and Media  
36002 Medical and Clinical Microbiology-Bacteriology  
39002 Food and Industrial Microbiology-Food and Beverage Spoilage and  
Contamination  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10804 Enzymes-Methods  
31000 Physiology and Biochemistry of Bacteria  
37006 Public Health-Public Health Laboratory Methods  
37060 Public Health: Disease Vectors-Inanimate  
37400 Public Health: Microbiology

BIOSYSTEMATIC CODES:

06210 Aerobic Helical or Vibrioid Gram-Negatives (1992- )  
06500 Gram-Negative Aerobic Rods and Cocci (1992- )

2/9/65 (Item 22 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)  
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08301660 BIOSIS NO.: 000043056658

OXYRASE SUPPLEMENTED MEDIA FOR BROTH DILUTION MIC TESTING OF ANAEROBES

AUTHOR: PRATT K; HALL G

AUTHOR ADDRESS: CLEVELAND CLINIC FOUNDATION, CLEVELAND, OHIO.

JOURNAL: 92ND GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW  
ORLEANS, LOUISIANA, USA, MAY 26-30, 1992. ABSTR GEN MEET AM SOC MICROBIOL  
92 (0). 1992. 481. 1992

CODEN: AGMME

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

DESCRIPTORS: ABSTRACT CLINDAMYCIN CEFTIZOXIME CEFOXITIN PIPERACILLIN  
ANTIBACTERIAL-DRUG METHOD MINIMUM INHIBITORY CONCENTRATION OXYGEN-REDUCING  
ENZYME SYSTEM

CONCEPT CODES:

10804 Enzymes-Methods  
22002 Pharmacology-General  
32000 Microbiological Apparatus, Methods and Media  
36002 Medical and Clinical Microbiology-Bacteriology  
38504 Chemotherapy-Antibacterial Agents  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10050 Biochemical Methods-General  
10060 Biochemical Studies-General  
12512 Pathology, General and Miscellaneous-Therapy (1971- )  
31000 Physiology and Biochemistry of Bacteria  
36001 Medical and Clinical Microbiology-General; Methods and Techniques

BIOSYSTEMATIC CODES:

05000 Bacteria-General Unspecified (1992- )

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):

Microorganisms  
Bacteria  
Eubacteria

2/9/66 (Item 23 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)  
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08281075 BIOSIS NO.: 000043047148

IN-VITRO ACTIVITY OF AZITHROMYCIN AGAINST ANAEROBES USING THE MICRODILUTION  
TECHNIQUE WITH OXYRASE SUPPLEMENTED BROTH

AUTHOR: NACHNANI S; MOLITORIS E; WEXLER H

AUTHOR ADDRESS: UCLA SCH. MED., LOS ANGELES, CALIF.

JOURNAL: 92ND GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 26-30, 1992. ABSTR GEN MEET AM SOC MICROBIOL 92 (0). 1992. 3. 1992

CODEN: AGMME

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

DESCRIPTORS: ABSTRACT ANTIBACTERIAL-DRUG

CONCEPT CODES:

22002 Pharmacology-General  
36002 Medical and Clinical Microbiology-Bacteriology  
38504 Chemotherapy-Antibacterial Agents  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10064 Biochemical Studies-Proteins, Peptides and Amino Acids  
10068 Biochemical Studies-Carbohydrates  
32600 In Vitro Studies, Cellular and Subcellular

BIOSYSTEMATIC CODES:

05000 Bacteria-General Unspecified (1992- )

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):

Microorganisms  
Bacteria  
Eubacteria

2/9/67 (Item 24 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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08149978 BIOSIS NO.: 000042119401

**EFFECTS OF OXYRASE OX-INDUCED ANOXIA ON CELLULAR ADENINE NUCLEOTIDES AN**

AUTHOR: CADNAPAPHORNCHAI P; KELLNER D

AUTHOR ADDRESS: WAYNE STATE UNIV. SCH. MED., DETROIT, MICH. 48201.

JOURNAL: 1992 MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR  
EXPERIMENTAL BIOLOGY (FASEB), PART I, ANAHEIM, CALIFORNIA, USA, APRIL 5-9,  
1992. FASEB (FED AM SOC EXP BIOL) J 6 (4). 1992. A1060. 1992

CODEN: FAJOE

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

DESCRIPTORS: ABSTRACT RABBIT ATP ADP AMP LACTATE

CONCEPT CODES:

02506 Cytology and Cytochemistry-Animal  
10012 Biochemistry-Gases (1970- )  
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines  
10808 Enzymes-Physiological Studies  
13003 Metabolism-Energy and Respiratory Metabolism  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10068 Biochemical Studies-Carbohydrates  
32600 In Vitro Studies, Cellular and Subcellular

BIOSYSTEMATIC CODES:

86040 Leporidae

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):

Animals  
Chordates  
Vertebrates  
Nonhuman Vertebrates  
Mammals  
Nonhuman Mammals  
Lagomorphs

2/9/68 (Item 25 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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07765588 BIOSIS NO.: 000041063839

OXYRASE ENZYME AND MOTILITY ENRICHMENT FUNG-YU TUBE PROCEDURE FOR RAPID

**DETECTION OF LISTERIA-MONOCYTOGENES AND LISTERIA-SPP**

AUTHOR: YU L S L; FUNG D Y C

AUTHOR ADDRESS: KANSAS STATE UNIVERSITY, MANHATTAN, KANSAS 66506.

JOURNAL: 91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY,  
DALLAS, TEXAS, USA, MAY 5-9, 1991. ABSTR GEN MEET AM SOC MICROBIOL 91 (0).  
1991. 272. 1991

CODEN: AGMME

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

DESCRIPTORS: ABSTRACT BACILLUS KLEBSIELLA PROTEUS ESCHERICHIA SALMONELLA  
SHIGELLA STAPHYLOCOCCUS STREPTOCOCCUS CONTAMINATED GROUND BEEF

**CONCEPT CODES:**

10804 Enzymes-Methods  
13502 Food Technology-General; Methods  
13516 Food Technology-Meats and Meat By-Products  
13530 Food Technology-Evaluations of Physical and Chemical Properties  
(1970- )  
32000 Microbiological Apparatus, Methods and Media  
36002 Medical and Clinical Microbiology-Bacteriology  
39002 Food and Industrial Microbiology-Food and Beverage Spoilage and  
Contamination  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10064 Biochemical Studies-Proteins, Peptides and Amino Acids  
22502 Toxicology-Foods, Food Residues, Additives and Preservatives

**BIOSYSTEMATIC CODES:**

04810 Enterobacteriaceae (1979- )  
05510 Micrococcaceae (1979- )  
05514 Streptococcaceae (1979- )  
05610 Bacillaceae (1979- )  
05712 Gram-positive Asporogenous Rod-Shaped Bacteria-Uncertain  
Affiliation (1979- )

**BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):**

Microorganisms  
Bacteria

2/9/70 (Item 27 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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07113931 BIOSIS NO.: 000039050625

**SUBSTITUTION OF THE ANAEROBIC CHAMBER WITH OXYRASE FOR THE GROWTH OF  
TREPONEMA-DENTICOLA**

AUTHOR: YOTIS W; GOPALSAMI C; HOERMAN K; KEENE J; SIMONSON L

AUTHOR ADDRESS: LOYOLA UNIV. CHICAGO MED. CENTER, MAYWOOD, ILL.

JOURNAL: 90TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY 1990,  
ANAHEIM, CALIFORNIA, USA, MAY 13-17, 1990. ABSTR ANNU MEET AM SOC MICROBIOL  
90 (0). 1990. 213. 1990

CODEN: ASMAC

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

DESCRIPTORS: ABSTRACT GROWTH PROTEIN CONTENT ENZYME PROFILE

**CONCEPT CODES:**

10012 Biochemistry-Gases (1970- )  
10804 Enzymes-Methods  
31000 Physiology and Biochemistry of Bacteria  
32000 Microbiological Apparatus, Methods and Media  
00520 General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals  
10808 Enzymes-Physiological Studies  
13012 Metabolism-Proteins, Peptides and Amino Acids

**BIOSYSTEMATIC CODES:**

04510 Spirochaetaceae (1979- )

**BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA):**

Microorganisms  
Bacteria

?t s2/3,kwic/9 26 28 29 33 32 34 35 36

2/3,KWIC/9 (Item 1 from file: 357)  
DIALOG(R)File 357:Derwent Biotech Res.  
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0263402 DBR Accession No.: 2001-02978 PATENT  
Method for controlled reduction of nitroaromatic compounds comprises  
reacting nitroaromatic compound with organic non-aromatic reductant in  
the presence of redox enzyme - with use of the redox enzyme, oxyrase  
AUTHOR: Shah M M  
CORPORATE SOURCE: Richland, WA, USA.  
PATENT ASSIGNEE: Battelle-Mem.Inst.Richland 2000  
PATENT NUMBER: US 6130083 PATENT DATE: 20001010 WPI ACCESSION NO.:  
2000-685984 (2067)  
PRIORITY APPLIC. NO.: US 200642 APPLIC. DATE: 19981124  
NATIONAL APPLIC. NO.: US 200642 APPLIC. DATE: 19981124  
LANGUAGE: English

- with use of the redox enzyme, oxyrase

2/3,KWIC/26 (Item 1 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01037924

**METHODS FOR STERILIZING TISSUE**  
**PROCEDES DE STERILISATION DE TISSUS**

Patent Applicant/Assignee:

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90025, US, US (Residence), US (Nationality), (For all designated states  
except: US)

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(Residence), US (Nationality), (Designated only for: US)  
MACPHEE Martin J, 9971 Lake Landing Road, Montgomery Village, MD 20886,  
US, US (Residence), US (Nationality), (Designated only for: US)  
MANN David M, 7430 Brenish Drive, Gaithersburg, MD 20879, US, US  
(Residence), US (Nationality), (Designated only for: US)

Legal Representative:

FLESHNER Mark L (et al) (agent), Fleshner & Kim, LLP, P.O. Box 221200,  
Chantilly, VA 20153-1200, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200365802 A1 20030814 (WO 0365802)  
Application: WO 2003US1075 20030131 (PCT/WO US0301075)  
Priority Application: US 200260208 20020201

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT SE SI  
SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 30072

Fulltext Availability:

Detailed Description

Detailed Description

... acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan,  
sodium capryl N-acetyl tryptophan, and methionine; azides, such as  
sodium azide; enzymes, such as Superoxide Dismutase (SOD), Catalase,

each heat treatment and level of inoculum, cell populations detected on mMOM agar after incubating plates for 48 h or on immunoblots after 24 h were not significantly different. Results indicate that the immunoblot technique in conjunction with enrichment in FB containing either catalase or Oxyrase can be successfully used to detect healthy and heat-injured cells of *L. monocytogenes* in diverse types of foods within 34 h.

Tags: Animal; Support, Non-U.S. Gov't

Descriptors: \*Food Microbiology; \*Heat; \*Listeria monocytogenes --isolation and purification--IP; Antibodies, Monoclonal; Brassica --microbiology--MI; Culture Media--chemistry--CH; Immunoblotting; Listeria monocytogenes--growth and development--GD; Meat--microbiology--MI; Milk --microbiology--MI

CAS Registry No.: 0 (Antibodies, Monoclonal); 0 (Culture Media)

Record Date Created: 19951212

Record Date Completed: 19951212

2/9/5 (Item 5 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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08838292 20122412 PMID: 10655335

**Evaluation of the oxyrase OxyPlate anaerobe incubation system.**

Wiggs L S; Cavallaro J J; Miller J M

Diagnostic Microbiology Section, Hospital Infections Program, Centers for Disease Control and Prevention, Atlanta, Georgia 30333, USA.

Journal of clinical microbiology (UNITED STATES) Feb 2000 38 (2)  
p499-507, ISSN 0095-1137 Journal Code: 7505564

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

The Oxyrase OxyPlate anaerobe incubation system was evaluated for its ability to support the growth of clinically significant anaerobic bacteria previously identified by the Anaerobe Reference Laboratory at the Centers for Disease Control and Prevention. The results were compared with those obtained with conventional anaerobe blood agar plates incubated in an anaerobe chamber. We tested 251 anaerobic bacterial strains. Plates were read at 24, 48, and 72 h; growth was scored by a numerical coding system that combines the degree of growth and the colony size. Organisms (number of strains tested) used in this study were *Actinomyces* (32), *Anaerobiospirillum* (8), *Bacteroides* (39), *Campylobacter* (8), *Clostridium* (96), *Fusobacterium* (12), *Leptotrichia* (8), *Mobiluncus* (8), *Peptostreptococcus* (16), and *Propionibacterium* (24). At 24 h, 101 (40.2%) of the 251 strains tested showed better growth with the anaerobe chamber than with the OxyPlate system, 10 (4.1%) showed better growth with the OxyPlate system, and the remaining 140 (55.8%) showed equal growth with both systems. At 48 h, 173 (68.9%) showed equal growth with both systems, while 78 (31.1%) showed better growth with the anaerobe chamber. At 72 h, 176 (70.1%) showed equal growth with both systems, while 75 (29.9%) showed better growth with the anaerobe chamber. The OxyPlate system performed well for the most commonly isolated anaerobes but was inadequate for some strains. These results indicate that the Oxyrase OxyPlate system was effective in creating an anaerobic atmosphere and supporting the growth of anaerobic bacteria within 72 h. OxyPlates would be a useful addition to the clinical microbiology laboratory lacking resources for traditional anaerobic culturing techniques.

Tags: Human

Descriptors: \*Bacteria, Anaerobic--growth and development--GD; \*Bacterial Infections--microbiology--MI; \*Bacteriological Techniques; Agar; Anaerobiosis; Bacteria, Anaerobic--classification--CL; Bacteria, Anaerobic --isolation and purification--IP; Blood; Centers for Disease Control and Prevention (U.S.); Culture Media; Evaluation Studies; Reagent Kits, Diagnostic; United States

CAS Registry No.: 0 (Culture Media); 0 (Reagent Kits, Diagnostic); 9002-18-0 (Agar)

Record Date Created: 20000316

Record Date Completed: 20000316

and a salt of an **azide** .

...a nutrient medium composition containing a biocatalytic oxygen reducing agent and a salt of an **azide** in an amount sufficient to limit the growth of facultative microorganisms while not inhibiting the...

Non-exemplary or Dependent Claim(s):

2. The medium composition of claim 1, wherein the amount of the **azide** ranges from about 0.1 mg/ml to 1.0 mg/ml in broth medium...

...3. The medium composition of claim 1, wherein the amount of the **azide** ranges from about 0.01 mg/ml to 1.0 mg/ml in agar medium...medium composition of claim 10, wherein the inhibitor of the electron transport system comprises an **azide** or cyanide a salt of an **azide** or a cyanide...

...medium composition of claim 10, wherein the inhibitor of the electron transport system is sodium **azide** .

...

...of claim 20, wherein the inhibitor of the electron transport system comprises a salt of **azide** or ...23. The medium composition of claim 20, wherein the inhibitor is sodium **azide** .

...

...26. The medium composition of claim 25, wherein the salt of an **azide** is present in an amount sufficient to limit the growth of the facultative microbes but...35. The method of claim 31, wherein the salt of an **azide** is sodium **azide** .

2/3,KWIC/35 (Item 4 from file: 654)

DIALOG(R)File 654:US Pat.Full.

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4348272

Derwent Accession: 2000-498205

Utility

REASSIGNED

C/ Nitro-[2,1-b]imidazopyran compounds and antibacterial uses thereof ; BACTERICIDES TREATING PATHOGENIC INFECTIONS OF MYCOBACTERIA, CLOSTRIDIUM, CRYPTOSPORIDIUM OR HELICOBACTER AND MULTIDRUG-RESISTANT TUBERCULOSIS

Inventor: Baker, William R., Bellevue, WA

Shaopei, Cai, Seattle, WA

Keeler, Eric L., Seattle, WA

Assignee: PathoGenesis Corporation (02), Seattle, WA

PathoGenesis Corp (Code: 35731)

Examiner: Shah, Mukund J. (Art Unit: 164)

Assistant Examiner: Truong, Tamthom N.

Law Firm: Christensen O'Connor Johnson & Kindness PLLC

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 6087358	A	20000711	US 97924559	19970905
CIP	Pending			WO 96US10904	19960625
CIP	US 5668127	A		US 95496850	19950626

Fulltext Word Count: 20176

Description of the Invention:

...THF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and **diphenylphosphorylazide** in toluene at 70 to 150[degree(s)] C. to give an isocyanate intermediate. Reaction...sub]3 C[sub]6 H[sub]4 SO[sub]2) is reacted with sodium **azide** . The resulting **azide** is reduced with 1,3-propanediol and triethylamine to give amine 23...group with concomitant cyclization to give the cyclic tosylate 31b. Reaction of 31b with sodium **azide** and reduction (1,3-propanediol,

triethylamine) gave the amine 31d in good yield. Synthesis of...  
2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1 eq.), diphenylphosphoryl azide (1 eq.) in toluene is heated at 80[degree(s)] C. for 4 h, cooled...Third edition. National Committee: for Clinical Laboratory Standards, Villanova, Pa.) except for the following modification: **Oxyrase** (R) enzyme ( **Oxyrase** Inc., Mansfield, Ohio) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, Kans.) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S. K. et al. " **Oxyrase** , a method which avoids CO<sub>2</sub> in the incubation atmosphere for anaerobic susceptibility testing...

...S. K. et al., "Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by **Oxyrase** agar dilution and E-test methodologies," J. Clin. Microbiol. 33:1366-1367 (1995)). Thus, the...

...2 and N<sub>2</sub>- enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need of such equipment and provided a mechanism of avoiding...J. Clin. Microbiol. Infect. Dis., 10:834-842 (1991)). This problem was eliminated by using **Oxyrase** , since this enzyme removed O<sub>2</sub> rapidly converting it to H<sub>2</sub> O...

...Quality control anaerobic microorganisms (Bacteroides thetaiotamicrons ATCC 29741; Eubacterium lentum ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...27 mmol) of the tosylate prepared above and 100 mg (1.53 mmol) of sodium azide in 5 mL dry DMSO was heated in an oil bath (65[degree(s)] C...and the solvent evaporated. The residue was recrystallized from ethyl acetate/hexane to give the azide as light yellow needles: mp 157.5[degree(s)] C. (dec.); [[alpha]][sup]25 D...ml screw-cap plastic tubes, and oxygen was removed by addition of 40 [mu]l **Oxyrase** For Broth ( **Oxyrase** , Inc., Mansfield, Ohio). After 24 h incubation at 37[degree(s)] C., the compounds listed...

2/3,KWIC/36 (Item 5 from file: 654)  
DIALOG(R)File 654:US Pat.Full.  
(c) Format only 2003 The Dialog Corp. All rts. reserv.

3887342

Derwent Accession: 1997-100154

Utility

REASSIGNED

C/ Nitroimidazole antibacterial compounds and methods of use thereof  
; MYCOBACTERIUM TUBERCULOSIS, CLOSTRIDIUM

Inventor: Baker, William R., Bellevue, WA

Shaopei, Cai, Seattle, WA

Keeler, Eric L., Seattle, WA

Assignee: PathoGenesis Corporation (02), Seattle, WA

PathoGenesis Corp (Code: 35731)

Examiner: Shah, Mukund J. (Art Unit: 122)

Assistant Examiner: Ngo, Tamthom T.

Law Firm: Christensen O'Connor Johnson & Kindness PLLC

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 5668127	A	19970916	US 95496850	19950626

Fulltext Word Count: 12597

Description of the Invention:

...THF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and diphenylphosphorylazide in toluene at 70[degree(s)] to 150[degree(s)] C. to give an isocyanate...

2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1



eq.), diphenylphosphoryl azide (1 eq.) in toluene is heated at 80[degree(s)] C. for 4 h, cooled...

...Third edition. National Committee for Clinical Laboratory Standards, Villanova, Pa.) except for the following modification: **Oxyrase** (R) enzyme ( **Oxyrase** Inc., Mansfield, Ohio) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, Kans.) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S. K. et al. " **Oxyrase** , a method which avoids CO[sub]2 in the incubation atmosphere for anaerobic susceptibility testing by **Oxyrase** agar dilution and E-test methodologies," J. Clin. Microbial. 33:1366-1367 (1995)). Thus, the...

...2 and N[sub]2 - enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need of such equipment and provided a mechanism of avoiding...

...J. Clin. Microbiol. Infect. Dis. 10:834-842 (1991)). This problem is eliminated by using **Oxyrase** , since this enzyme removed O[sub]2 rapidly converting it to H[sub]2 O...

...Quality control anaerobic microorganisms (Bacteroides thetaiotamicrons ATCC 29741; Eubacterium lentum ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...

?logoff hold

07oct03 09:19:08 User228206 Session D2062.4

	\$0.15	0.048	DialUnits	File155
	\$1.05	5	Type(s)	in Format 9
	\$1.05	5	Types	
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	\$0.13	0.007	DialUnits	File357
	\$2.10	1	Type(s)	in Format 3
	\$2.10	1	Types	
\$2.23	Estimated cost			File357
	\$0.02	0.004	DialUnits	File657
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	\$0.02	0.004	DialUnits	File672
\$0.02	Estimated cost			File672
	\$0.02	0.004	DialUnits	File673
\$0.02	Estimated cost			File673
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	\$4.80	3	Types	
\$5.81	Estimated cost			File349
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\$1.39	Estimated cost			File10
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	\$3.50	5	Type(s)	in Format 3

\$3.50 5 Types  
 \$6.15 Estimated cost File654  
 \$0.24 0.026 DialUnits File73  
 \$7.65 3 Type(s) in Format 9  
 \$7.65 3 Types  
 \$7.89 Estimated cost File73  
 \$0.83 0.148 DialUnits File5  
 \$36.75 21 Type(s) in Format 9  
 \$36.75 21 Types  
 \$37.58 Estimated cost File5  
 OneSearch, 16 files, 0.976 DialUnits FileOS  
 \$0.46 TELNET  
 \$73.28 Estimated cost this search  
 \$73.28 Estimated total session cost 0.976 DialUnits

### Status: Signed Off. (2 minutes)

Fulltext Availability:  
Detailed Description

#### Detailed Description

... TEF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and **diphenylphosphorylazide** in toluene at 70 to 150°C to give an isocyanate intermediate. Reaction of an...

...p-toluenesulfonyl chloride in pyridine. The intermediate sulfonate 4 (R3=pCH3C6H4SO2) is reacted with sodium **azide**. The resulting **azide** is reduced with 1,3-propanediol and triethyl amine to give amine 23.

Referring now...group with concomitant cyclization to give the cyclic tosylate 31b. Reaction of 31b with sodium **azide** and reduction (1,3-propanediol, triethylamine) gave the amine 31d in good yield. Synthesis of...2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1 eq.), diphenylphosphoryl **azide** (1 eq.) in toluene is heated at 80°C for 4 h, cooled and t...Third edition. National Committee for Clinical Laboratory Standards, Villanova, PA) except for the following modification: **OxyraseO** enzyme ( **Oxyrase** Inc., Mansfield, OH) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, KS) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S.K. et al. " **Oxyrase** , a method which avoids CO2 in the incubation atmosphere for anaerobic susceptibility testing of antibiotics...

...S.K. et al., "Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by **Oxyrase** agar dilution and E-test methodologies," J Clin. Microbiol. 33:1366-1367 (1995)). Thus, the...

...the CO2, H2 and N2. enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need of such equipment and provided a mechanism of avoiding...

...J Clin. Microbiol. Infect. Dis., 10:834-842 (1991)). This problem was eliminated by using **Oxyrase** , since this enzyme removed O2 rapidly converting it to H2O without toxic intermediates. Quality control anaerobic microorganisms (Bacteroides thetaiotamicrons ATCC 29741; Eubacterium lentum ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...27 mmol) of the tosylate prepared above and 100 mg (1.53 mmol) of **sodium azide** in 5 mL dry DMSO was heated in an oil bath (65°C) for h...

...and the solvent evaporated. The residue was recrystallized from ethyl acetate/hexane to give the **azide** as light yellow needles: mp 157.5°C (dec.); [α]<sub>D</sub><sup>25</sup> (DW, c=1.0...15 ml screw@cap plastic tubes, and oxygen was removed by addition of 40 g/l **Oxyrase** For Broth ( **Oxyrase** , Inc., Mansfield, OH).

After 24 h incubation at 37°C, the compounds listed in Table...

2/3,KWIC/33 (Item 2 from file: 654)  
DIALOG(R)File 654:US Pat.Full.  
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0005376507 \*\*IMAGE Available  
Methods for sterilizing tissue  
Inventor: Greib, Teri, INV  
Mann, David, INV  
Stafford, Richard, INV  
Burgess, Wilson, INV

28667

Drohan, William, INV  
MacPhee, Martin, INV  
Correspondence Address: FLESHNER & KIM, LLP, P.O. BOX 221200, CHANTILLY, VA  
, 20153, US

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 20030180181	A1	20030925	US 2002133631	20020429
CIP	PENDING			US 200260208	20020201

Fulltext Word Count: 41387

Description of the Invention:

...acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan, sodium capryl N-acetyl tryptophan, and methionine; **azides**, such as sodium **azide**; enzymes, such as Superoxide Dismutase (SOD), Catalase, and [capital Delta, Greek]4, [capital Delta, Greek] ...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with **Oxyrase** to provide an anaerobic environment. Serial ten-fold dilutions were made to a dilution of...

2/3,KWIC/32 (Item 1 from file: 654)  
DIALOG(R) File 654:US Pat.Full.  
(c) Format only 2003 The Dialog Corp. All rts. reserv.

0005385841 \*\*IMAGE Available

**Methods for sterilizing tissue**

Inventor: Burgess, Wilson, INV  
Drohan, William, INV  
Macphee, Martin, INV  
Mann, David, INV

Correspondence Address: FLESHNER & KIM, LLP, P.O. BOX 221200, CHANTILLY, VA  
, 20153, US

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 20030185702	A1	20031002	US 200260208	20020201

Fulltext Word Count: 35876

Description of the Invention:

...acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan, sodium capryl N-acetyl tryptophan, and methionine; **azides**, such as sodium **azide**; enzymes, such as Superoxide Dismutase (SOD), Catalase, and [capital Delta, Greek]4, [capital Delta, Greek] ...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with **Oxyrase** to provide an anaerobic environment. Serial ten-fold dilutions were made to a dilution of...

2/3,KWIC/34 (Item 3 from file: 654)  
DIALOG(R) File 654:US Pat.Full.  
(c) Format only 2003 The Dialog Corp. All rts. reserv.

0005305261 \*\*IMAGE Available

**Medium composition, method and device for selectively enhancing the isolation of anaerobic microorganisms contained in a mixed sample with facultative microorganisms**

Inventor: James Copeland, INV  
Kathy Myers, INV

Correspondence Address: FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP, 7th  
Floor 1100 Superior Avenue, Cleveland, OH, 44114-2516, US

Publication	Application	Filing
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	Number	Kind	Date	Number	Date
Main Patent	US 20030138867	A1	20030724	US 20017739	20011108
Provisional				US 60-246872	20001108

Fulltext Word Count: 12721

#### Abstract:

...The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $\text{N}[\text{sub}]{3}[\text{sup}]{-}$ ), cyanide ( $\text{CN}[\text{sup}]{-}$ ) or related compounds. These inhibitors are present in...

#### Summary of the Invention:

...anaerobes. New approaches, such as use of biocatalytic oxygen reducing agents, see for example the **Oxyrase** (R) microbiological products and processes, (U.S. Pat. Nos. 4,476,224; 4,996,073...as OxyDish(TM), (U.S. Pat. Nos. 5,830,746 and 5,955,344) of **Oxyrase**, Inc., Mansfield, Ohio (the assignee of the present invention), have simplified and reduced costs for...medium composition comprises a nutrient medium, an oxygen reducing agent (preferably, biocatalytic) and a cyanide, **azide**, and/or other related inhibitor compounds. These compounds act by chemically, irreversibly bonding to key...The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $\text{N}[\text{sub}]{3}[\text{sup}]{-}$ ), cyanide ( $\text{CN}[\text{sup}]{-}$ ) or related compounds. These inhibitors are present in...0017] a. providing a medium composition comprising a nutrient medium and a salt of an **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...0020] d. comparing growth in the medium composition, with partial growth with the **azide** being indicative that an anaerobe is present; and...

...0021] e. sampling the medium composition containing the **azide** for further characterization and isolation of the anaerobe organism of a salt of **azide**; and...

#### Description of the Drawings:

...0033]FIG. 1 is a photograph showing the growth of *C. perfringens* at various **azide** concentrations...

...0034]FIG. 2 is a photograph showing the growth of *P. levii* at various **azide** concentrations

#### Description of the Invention:

...fragments), and an inhibitor of the respiratory electron transport system, such as a salt of **azide**, cyanide or like compounds

#### Exemplary or Independent Claim(s):

...that contains facultative microorganisms, wherein said medium composition comprises a nutrient medium, a salt of **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...steps: a. providing a medium composition comprising a nutrient medium and a salt of an **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...medium composition anaerobically; d. comparing growth in the medium composition, with partial growth with the **azide** being indicative that an anaerobe is present; and, e. sampling the medium composition containing the **azide** for further characterization and isolation of the anaerobe organism...as salts or buffers, liquid or solid, and an effective concentration of a salt of **azide**; and, b. a means for creating an anaerobic environment for the medium composition...membrane fragments derived from the cytoplasmic membranes of *Escherichia coli* and a salt of an **azide**.

...

...microbes comprising a base medium, a biocatalytic oxygen reducing agent

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After the solution is degassed, an amount of **Oxyrase** @ material sufficient to provide about 0.3 units of activity per mL is added under an inert atmosphere such as nitrogen or argon gas. The added **Oxyrase** @ material is preferably purified to remove extraneous cellular contaminants. Most preferably the **Oxyrase** @ material is treated with gelatin using a preferential fractionation method prior to addition to the...

...of gelatin in

800 mLs of water by heating. After cooling, about 200 mL of **Oxyrase**0 material at about 30 units/mL is added. Thus, the resulting solution has about 6 units/mL of **Oxyrase** activity. The **Oxyrase** @ material is separated from the liquid by filtration, although centrifugation or other means of separation work as well. Then the purified **Oxyrase** @ is added to the base material to provide about 0.3 units/mL of activity...of oxygen (e.g. under helium, nitrogen or argon) until used. In addition, gelatin-treated **Oxyrase** @ detailed in Example 1 is added in the absence of oxygen after the degassing process to provide a SUBSTITUTE SHEET (RULE 26) final activity of **Oxyrase**S material of about 0.3 units/mL.

Troponin I stock solution as described in Example...

Claim

... and an oxygen scavenger.

8 The composition of claim 7 wherein the oxygen scavenger is **Oxyrase** @ material.  
SUBSTITUTE SHEET (RULE 26)

9 A composition for use in clinical assays for troponin...

2/3, KWIC/29 (Item 4 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00361237

**NITROIMIDAZOLE ANTIBACTERIAL COMPOUNDS AND METHODS OF USE THEREOF**  
**COMPOSES ANTIBACTERIENS DE NITRO-IMIDAZOLE ET LEURS PROCÉDES D'UTILISATION**  
Patent Applicant/Assignee:

PATHOGENESIS CORPORATION,  
BAKER William R,  
SHAOPEI Cai,  
KEELER Eric L,  
Inventor(s):  
BAKER William R,  
SHAOPEI Cai,  
KEELER Eric L,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9701562 A2 19970116  
Application: WO 96US10904 19960625 (PCT/WO US9610904)  
Priority Application: US 95496850 19950626

Designated States: AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB  
GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL  
PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN KE LS MW SD SZ UG AM  
AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT

and A4, A5 and A6 desaturases; uric acid...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with **Oxyrase** to provide an

2/3,KWIC/28 (Item 3 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00466435 \*\*Image available\*\*

**STABILIZED COMPOSITIONS OF CARDIAC MARKERS**  
**COMPOSITIONS STABILISEES DE MARQUEURS CARDIAQUES**

Patent Applicant/Assignee:

MEDICAL ANALYSIS SYSTEMS INC (MAS),

Inventor(s):

PALMER Dennis D,

MORJANA Nihmat,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9856900 A1 19981217

Application: WO 98US11809 19980609 (PCT/WO US9811809)

Priority Application: US 97874566 19970613; US 97898538 19970722

Designated States: JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 8493

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... Dade International Inc.

Figure 3A and 3B show the stability of Myoglobin with and without **Oxyrase** @ material. Data was obtained using a Stratus@ II Fluorometric Analyzer, available from Dade International Inc.

Figure 3A shows Myoglobin Stability without **Oxyrase** (predicted stability at 4C = 100 days).

Figure 3B shows Myoglobin Stability with **Oxyrase** (predicted stability at 4C>1000 days).

Figure 4 shows the effect of **Oxyrase** @ material on the recovery of CK-MB after a freeze-thaw cycle.

Figure 5A shows...368-379  
(1987).

One such biocatalytic oxygen-reducing agent, prepared from e. coli is EC **Oxyrase** @ oxygen reducing agent available from **Oxyrase**, Inc. The cell extract is filtered to obtain a suspension of 0.2 microns or...

...S. 5,240,853.

SUBSTITUTE SHEET (RULE 26)

It has been found that preferentially the

**Oxyrase** @ material should be treated to remove extraneous cellular contaminants. Most preferably the **Oxyrase**0 material is treated with gelatin using a preferential fractionation method. In this method an aqueous solution containing 0.05% to 0.15% gelatin and 5-10 units/mL **Oxyrase** @ material is prepared. At gelatin concentrations over 0.25%, the **Oxyrase** @ material loses its activity. The **Oxyrase**0 material/gelatin solution is filtered through successively smaller pore

size filters, for example 8 micron...

...is preferred that the filters have low protein binding so as not to bind the **Oxyrase** (D material and/or the gelatin. In addition, a substrate for the **Oxyrase** @ material is added to act as a hydrogen donor for the **Oxyrase** (D material. Typical substrates are lactic acid, succinic acid, formic acid, and alpha glycerol phosphate...prior art at the concentrations found in the prior art such as gentamycin, clortrimazole, sodium **azide**, mycostatin, thimerosal, Kathon and/or Proclin 300.

The solution may be degassed and should be...prior art at the concentrations found in the prior art such as gentamycin, clortrimazole, sodium **azide**, mycostatin, thimerosal, Kathon and/or Proclin 300

In addition, stabilizing proteins such as...stabilization as discussed above. That is - anoxia is maintained by degassing the matrix, adding the **Oxyrase** (D material and/or by adding other oxygen scavengers. Preferentially the means for maintaining anoxia are achieved by degassing and by including **Oxyrase** @ material into the solution. More preferentially the **Oxyrase** @ material is treated to remove extraneous cellular contaminants. Most preferably the **Oxyrase** @ material is treated with gelatin using a preferential fractionation method. In this method an aqueous...

...gelatin and 5-10 units/mL is prepared. At gelatin concentrations over 0.25%, the **Oxyrase** @ material loses its activity. The **Oxyrase** @ material/gelatin solution is filtered through successively smaller pore size filters, for example 8 micron...

...filters have low protein  
SUBSTITUTE SHEET (RULE 26)  
binding so as not to bind the **Oxyrase** @ material and/or the gelatin. Figure 3 demonstrates the stability of myoglobin in the base material with and without **Oxyrase** @ material.

In addition, a substrate for the **Oxyrase** @ material is added to act as a hydrogen donor for the **Oxyrase** @ material. Typical substrates are lactic acid, succinic acid, formic acid, and alpha glycerol phosphate and...

...prior art at the concentrations found in the prior art such as gentamycin, clortrimazole, sodium **azide**, mycostatin, thimerosal, Kathon and/or Proclin 300.

Serum may be included if desired, but in...amounts ranging from 0-1000 ng/mL.

It has been found that the addition of **Oxyrase** @ material provides additional stability to CK-MB if the control material is stored frozen and...

...or argon gas.

Wb98 56900

pg 22  
pg 22



2/9/6 (Item 6 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
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08652189 95340783 PMID: 7615756

**Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by oxyrase agar dilution and E test methodologies.**

Spangler S K; Jacobs M R; Appelbaum P C  
Department of Pathology (Clinical Microbiology), Hershey Medical Center,  
Pennsylvania 17033, USA.

Journal of clinical microbiology (UNITED STATES) May 1995, 33 (5)  
p1366-7, ISSN 0095-1137 Journal Code: 7505564

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

The susceptibility of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin was tested by agar dilution and E test methods by using a commercially available plate and dish system (OxyDish) to provide anaerobic conditions. Plates were incubated for 48 h. MICs for 50% of strains tested and MICs for 90% of strains tested by agar dilution and E test methods corresponded within 1 doubling dilution for all compounds. When all antibiotics were considered together, agar and E test MICs were within 1 and 2 doubling dilutions of each other in 84 to 91% and > 99% of cases, respectively.

Tags: Human; Support, Non-U.S. Gov't

Descriptors: \*Bacteria, Anaerobic--drug effects--DE; \*Drug Resistance, Microbial; \*Microbial Sensitivity Tests--methods--MT; Agar; Azithromycin --pharmacology--PD; Bacteria, Anaerobic--isolation and purification--IP; Bacterial Infections--drug therapy--DT; Clarithromycin--pharmacology--PD; Erythromycin--pharmacology--PD; Evaluation Studies; Microbial Sensitivity Tests--statistics and numerical data--SN; Oxygenases; Roxithromycin --pharmacology--PD

CAS Registry No.: 114-07-8 (Erythromycin); 80214-83-1 (Roxithromycin); 81103-11-9 (Clarithromycin); 83905-01-5 (Azithromycin); 9002-18-0 (Agar)

Enzyme No.: EC 1.13. (Oxygenases); EC 1.14.- (Oxyrase)

Record Date Created: 19950818

Record Date Completed: 19950818

2/9/7 (Item 7 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

07708055 93163305 PMID: 8381817

**Oxyrase , a method which avoids CO2 in the incubation atmosphere for anaerobic susceptibility testing of antibiotics affected by CO2.**

Spangler S K; Appelbaum P C  
Department of Pathology (Clinical Microbiology), Hershey Medical Center,  
Pennsylvania 17033.

Journal of clinical microbiology (UNITED STATES) Feb 1993, 31 (2)  
p460-2, ISSN 0095-1137 Journal Code: 7505564

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Subfile: INDEX MEDICUS

The Oxyrase agar dilution method, with exclusion of CO2 from the environment, was compared with the reference agar dilution method recommended by the National Committee for Clinical Laboratory Standards (anaerobic chamber with 10% CO2) to test the susceptibility of 51 gram-negative and 43 gram-positive anaerobes to azithromycin and erythromycin. With the Oxyrase method, anaerobiosis was achieved by incorporation of the O2-binding enzyme Oxyrase in addition to

### Status: Path 1 of [Dialog Information Services via Modem]

### Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)  
Trying 31060000009999...Open

DIALOG INFORMATION SERVICES

PLEASE LOGON:

\*\*\*\*\* HHHHHHHH SSSSSSSS?

### Status: Signing onto Dialog

\*\*\*\*\*

ENTER PASSWORD:

\*\*\*\*\* HHHHHHHH SSSSSSSS? \*\*\*\*\*

Welcome to DIALOG

### Status: Connected

Dialog level 03.03.02D

Last logoff: 01oct03 10:09:44

Logon file405 07oct03 08:55:59

\*\*\* ANNOUNCEMENT \*\*\*

\*\*\*

--File 654 - US published applications from March 15, 2001 to the  
present are now online. Please see HELP NEWS 654 for details.

\*\*\*

--File 581 - The 2003 annual reload of Population Demographics is  
complete. Please see Help News581 for details.

\*\*\*

\*\*\*

--File 990 - NewsRoom now contains February 2003 to current records.  
File 992 - NewsRoom 2003 archive has been newly created and contains  
records from January 2003. The oldest months's records roll out of  
File 990 and into File 992 on the first weekend of each month.  
To search all 2003 records BEGIN 990, 992, or B NEWS2003, a new  
OneSearch category.

\*\*\*

--Connect Time joins DialUnits as pricing options on Dialog.  
See HELP CONNECT for information.

\*\*\*

\*\*\*

--SourceOne patents are now delivered to your email inbox  
as PDF replacing TIFF delivery. See HELP SOURCE1 for more  
information.

\*\*\*

--Important news for public and academic  
libraries. See HELP LIBRARY for more information.

\*\*\*

--Important Notice to Freelance Authors--  
See HELP FREELANCE for more information

\*\*\*

NEW FILES RELEASED

\*\*\*World News Connection (File 985)

\*\*\*Dialog NewsRoom - 2003 Archive (File 992)

\*\*\*TRADEMARKSCAN-Czech Republic (File 680)

\*\*\*TRADEMARKSCAN-Hungary (File 681)

\*\*\*TRADEMARKSCAN-Poland (File 682)

\*\*\*

UPDATING RESUMED

\*\*\*

RELOADED

\*\*\*Population Demographics - (File 581)

\*\*\*CLAIMS Citation (Files 220-222)

REMOVED

\*\*\*

```
>>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
>>>   of new databases, price changes, etc.      <<<
      ****
```

SYSTEM:HOME

Cost is in DialUnits

Menu System II: D2 version 1.7.9 term=ASCII

\*\*\* DIALOG HOMEBASE(SM) Main Menu \*\*\*

Information:

1. Announcements (new files, reloads, etc.)
2. Database, Rates, & Command Descriptions
3. Help in Choosing Databases for Your Topic
4. Customer Services (telephone assistance, training, seminars, etc.)
5. Product Descriptions

Connections:

6. DIALOG(R) Document Delivery
7. Data Star(R)

(c) 2003 Dialog, a Thomson business. All rights reserved.

/H = Help

/L = Logoff

/NOMENU = Command Mode

Enter an option number to view information or to connect to an online service. Enter a BEGIN command plus a file number to search a database (e.g., B1 for ERIC).

?b 411

07oct03 08:56:01 User228206 Session D2062.1

\$0.00 0.146 DialUnits FileHomeBase

\$0.00 Estimated cost FileHomeBase

\$0.00 Estimated cost this search

\$0.00 Estimated total session cost 0.146 DialUnits

File 411:DIALINDEX(R)

DIALINDEX(R)

(c) 2003 The Dialog Corporation plc

\*\*\* DIALINDEX search results display in an abbreviated \*\*\*

\*\*\* format unless you enter the SET DETAIL ON command. \*\*\*

?sf allscience

You have 280 files in your file list.

(To see banners, use SHOW FILES command)

?s oxyrase?/ti or (oxyrase? and azide?)

Your SELECT statement is:

s oxyrase?/ti or (oxyrase? and azide?)

Items	File
----	----
1	2: INSPEC_1969-2003/Sep W4
33	5: Biosis Previews(R)_1969-2003/Sep W4
4	10: AGRICOLA_70-2003/Sep
2	16: Gale Group PROMT(R)_1990-2003/Oct 03
18	34: SciSearch(R) Cited Ref Sci_1990-2003/Sep W4
2	35: Dissertation Abs Online_1861-2003/Sep
5	50: CAB Abstracts_1972-2003/Sep
6	51: Food Sci.&Tech.Abs_1969-2003/Oct W1
20	53: FOODLINE(R): Food Science & Technology_1972-2003/Oct 06
3	65: Inside Conferences_1993-2003/Oct W1
5	71: ELSEVIER BIOBASE_1994-2003/Oct W1
9	73: EMBASE_1974-2003/Sep W4
2	79: Foods Adlibra(TM)_1974-2002/Apr

Examined 50 files

>>>Term "TI" is not defined in file 126 and is ignored

2 126: TRADEMARKSCAN(R)-U.K.\_2003/Oct W1

```

>>>Term "TI" is not defined in file 127 and is ignored
      2 127: TRADEMARKSCAN(R)-CANADA_2003/Oct 01
>>>Term "TI" is not defined in file 131 and is ignored
      1 131: Pharmacontacts_2003/Jun
      9 144: Pascal_1973-2003/Sep W4
      7 155: MEDLINE(R)_1966-2003/Oct W1
      3 156: ToxFile_1965-2003/Oct W1
      2 160: Gale Group PROMT(R)_1972-1989
      2 162: Global Health_1983-2003/Aug
      2 203: AGRIS_1974-2003/Sep
      Examined 100 files
>>>Term "TI" is not defined in file 225 and is ignored
      10 225: DIALOG(R):Domain Names
>>>Term "TI" is not defined in file 226 and is ignored
      2 226: TRADEMARKSCAN(R)-US FED_OG 030930/AP 031002
>>>Term "TI" is not defined in file 228 and is ignored
      2 228: TRADEMARKSCAN(R)-Spain_2003/Oct W1
>>>Term "TI" is not defined in file 286 and is ignored
      9 286: Biocommerce Abs.& Dir._1981-2003/Sep B1
      1 315: ChemEng & Biotec Abs_1970-2003/Aug
      1 340: CLAIMS(R)/US Patent_1950-03/Oct 02
      2 342: Derwent Patents Citation Indx_1978-01/200345
      4 349: PCT FULLTEXT_1979-2002/UB=20031002,UT=20030925
      1 357: Derwent Biotech Res._1982-2003/Oct W1
      Examined 150 files
      1 358: Current BioTech Abs_1983-2003/Aug
>>>Term "TI" is not defined in file 398 and is ignored
      1 398: Chemsearch_1957-2003/Sep
      15 399: CA SEARCH(R)_1967-2003/UD=13914
      32 440: Current Contents Search(R)_1990-2003/Oct 07
>>>Term "TI" is not defined in file 453 and is ignored
      3 453: Drugs of the Future_1990-2002/Oct
>>>Term "TI" is not defined in file 515 and is ignored
      1 515: Dun`s Elec. Bus. Dir.(TM)_2003/Aug
>>>Term "TI" is not defined in file 516 and is ignored
      1 516: D & B - Duns Market Identifiers_2003/Aug
>>>Term "TI" is not defined in file 531 and is ignored
      1 531: Amer. Bus. Directory_2003/Sep
      Examined 200 files
>>>Term "TI" is not defined in file 537 and is ignored
      1 537: Harris Business Profiler_2003/Aug
>>>Term "TI" is not defined in file 547 and is ignored
      1 547: Experian Business Credit Profiles_2003/Oct W1
      1 553: Wilson Bus. Abs. FullText_1982-2003/Aug
      1 621: Gale Group New Prod.Annou.(R)_1985-2003/Oct 07
      2 636: Gale Group Newsletter DB(TM)_1987-2003/Oct 06
      6 654: US Pat.Full._1976-2003/Oct 02
>>>Term "TI" is not defined in file 657 and is ignored
      2 657: TRADEMARKSCAN(R)-France_2003/Oct W1
      Examined 250 files
>>>Term "TI" is not defined in file 672 and is ignored
      2 672: TRADEMARKSCAN(R)-Germany_2003/Oct W1
>>>Term "TI" is not defined in file 673 and is ignored
      2 673: TRADEMARKSCAN(R)-Italy_2003/Oct W1
      1 763: Freedonia Market Res._1990-2003/Sep

```

49 files have one or more items; file list includes 280 files.  
 One or more terms were invalid in 94 files.

```

?save temp
Temp SearchSave "TD761" stored
?rf
Your last SELECT statement was:
  S OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

```

Ref	Items	File
N1	33	5: Biosis Previews(R)_1969-2003/Sep W4
N2	32	440: Current Contents Search(R)_1990-2003/Oct 07

N3	20	53: FOODLINE(R): Food Science & Technology_1972-2003/O
N4	18	34: SciSearch(R) Cited Ref Sci_1990-2003/Sep W4
N5	15	399: CA SEARCH(R)_1967-2003/UD=13914
N6	10*	225: DIALOG(R):Domain Names
N7	9	73: EMBASE_1974-2003/Sep W4
N8	9	144: Pascal_1973-2003/Sep W4
N9	9*	286: Biocommerce Abs.& Dir._1981-2003/Sep B1
N10	7	155: MEDLINE(R)_1966-2003/Oct W1

49 files have one or more items; file list includes 280 files.

\* One or more search terms are invalid in this file

- Enter P or PAGE for more -

?p

Your last SELECT statement was:

S OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

Ref	Items	File
---	----	----
N11	6	51: Food Sci.&Tech.Abs_1969-2003/Oct W1
N12	6	654: US Pat.Full._1976-2003/Oct 02
N13	5	50: CAB Abstracts_1972-2003/Sep
N14	5	71: ELSEVIER BIOBASE_1994-2003/Oct W1
N15	4	10: AGRICOLA_70-2003/Sep
N16	4	349: PCT FULLTEXT_1979-2002/UB=20031002,UT=20030925
N17	3	65: Inside Conferences_1993-2003/Oct W1
N18	3	156: ToxFile_1965-2003/Oct W1
N19	3*	453: Drugs of the Future_1990-2002/Oct
N20	2	16: Gale Group PROMT(R)_1990-2003/Oct 03

49 files have one or more items; file list includes 280 files.

\* One or more search terms are invalid in this file

- Enter P or PAGE for more -

?p

Your last SELECT statement was:

S OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

Ref	Items	File
---	----	----
N21	2	35: Dissertation Abs Online_1861-2003/Sep
N22	2	79: Foods Adlibra(TM)_1974-2002/Apr
N23	2*	126: TRADEMARKSCAN(R)-U.K._2003/Oct W1
N24	2*	127: TRADEMARKSCAN(R)-CANADA_2003/Oct 01
N25	2	160: Gale Group PROMT(R)_1972-1989
N26	2	162: Global Health_1983-2003/Aug
N27	2	203: AGRIS_1974-2003/Sep
N28	2*	226: TRADEMARKSCAN(R)-US FED_OG 030930/AP 031002
N29	2*	228: TRADEMARKSCAN(R)-Spain_2003/Oct W1
N30	2	342: Derwent Patents Citation Indx_1978-01/200345

49 files have one or more items; file list includes 280 files.

\* One or more search terms are invalid in this file

- Enter P or PAGE for more -

?p

Your last SELECT statement was:

S OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

Ref	Items	File
---	----	----
N31	2	636: Gale Group Newsletter DB(TM)_1987-2003/Oct 06
N32	2*	657: TRADEMARKSCAN(R)-France_2003/Oct W1
N33	2*	672: TRADEMARKSCAN(R)-Germany_2003/Oct W1
N34	2*	673: TRADEMARKSCAN(R)-Italy_2003/Oct W1
N35	1	2: INSPEC_1969-2003/Sep W4
N36	1*	131: Pharmacontacts_2003/Jun
N37	1	315: ChemEng & Biotec Abs_1970-2003/Aug
N38	1	340: CLAIMS(R)/US Patent_1950-03/Oct 02
N39	1	357: Derwent Biotech Res._1982-2003/Oct W1
N40	1	358: Current BioTech Abs_1983-2003/Aug

49 files have one or more items; file list includes 280 files.

\* One or more search terms are invalid in this file

- Enter P or PAGE for more -

?p

Your last SELECT statement was:

S OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

Ref	Items	File
---	----	----
N41	1*	398: Chemsearch_1957-2003/Sep
N42	1*	515: Dun`s Elec. Bus. Dir.(TM)_2003/Aug
N43	1*	516: D & B - Duns Market Identifiers_2003/Aug
N44	1*	531: Amer. Bus. Directory_2003/Sep
N45	1*	537: Harris Business Profiler_2003/Aug
N46	1*	547: Experian Business Credit Profiles_2003/Oct W1
N47	1	553: Wilson Bus. Abs. FullText_1982-2003/Aug
N48	1	621: Gale Group New Prod.Annou.(R)_1985-2003/Oct 07
N49	1	763: Freedonia Market Res._1990-2003/Sep
N50	0	6: NTIS_1964-2003/Oct W1

49 files have one or more items; file list includes 280 files.

\* One or more search terms are invalid in this file

- Enter P or PAGE for more -

?b n10 n40 n39 n32 n33 n34 n28 n25 n21 n20 n17 n16 n15 n12 n7 n1;exs

07oct03 08:58:45 User228206 Session D2062.2

\$3.88 1.939 DialUnits File411

\$3.88 Estimated cost File411

\$0.70 TELNET

\$4.58 Estimated cost this search

\$4.58 Estimated total session cost 2.086 DialUnits

SYSTEM:OS - DIALOG OneSearch

File 155:MEDLINE(R) 1966-2003/Oct W1

(c) format only 2003 The Dialog Corp.

**\*File 155: Medline has been reloaded and accession numbers have changed. Please see HELP NEWS 155.**

File 358:Current BioTech Abs 1983-2003/Aug

(c) 2003 DECHEMA

File 357:Derwent Biotech Res. \_1982-2003/Oct W1

(c) 2003 Thomson Derwent & ISI

**\*File 357: File is now current. See HELP NEWS 357.**

Alert feature enhanced for multiple files, etc. See HELP ALERT.

File 657:TRADEMARKSCAN(R)-France 2003/Oct W1

(c) 2003 Compu-Mark N.V.

**\*File 657: For latest Trademark issue information, TYPE 9999999/23.**

**\*File reloaded with minor enhancements; no change in design.**

File 672:TRADEMARKSCAN(R)-Germany 2003/Oct W1

(c) 2003 Compu-Mark N.V.

**\*File 672: For latest issue info, TYPE 9999999/23.**

**\*Translated Goods and Services no longer searchable. See HELP NEWS 672**

File 673:TRADEMARKSCAN(R)-Italy 2003/Oct W1

(c) 2003 Compu-Mark N.V.

**\*File 673: For latest trademark issue information, TYPE 9999999/23.**

**\*Translated Goods and Services no longer searchable. See HELP NEWS 673**

File 226:TRADEMARKSCAN(R)-US FED OG 030930/AP 031002

(c) 2003 Thomson & Thomson

**\*File 226: For latest issue info, TYPE 9999999/23 \*\*\***

Sept 24, 2003 - file reloaded with enhancements. See HELP NEWS 226.

File 160:Gale Group PROMT(R) 1972-1989

(c) 1999 The Gale Group

File 35:Dissertation Abs Online 1861-2003/Sep

(c) 2003 ProQuest Info&Learning

File 16:Gale Group PROMT(R) 1990-2003/Oct 03

(c) 2003 The Gale Group

**\*File 16: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.**

File 65:Inside Conferences 1993-2003/Oct W1

(c) 2003 BLDSC all rts. reserv.

File 349:PCT FULLTEXT 1979-2002/UB=20031002,UT=20030925

(c) 2003 WIPO/Univentio

File 10:AGRICOLA 70-2003/Sep

(c) format only 2003 The Dialog Corporation

File 654:US Pat.Full. 1976-2003/Oct 02

(c) Format only 2003 The Dialog Corp.

\*File 654: US published applications now online. See HELP NEWS 654 for details. Reassignments current through August 4, 2003.

File 73:EMBASE 1974-2003/Sep W4

(c) 2003 Elsevier Science B.V.

File 5:Biosis Previews(R) 1969-2003/Sep W4

(c) 2003 BIOSIS

Set Items Description

--- ----

Executing TD761

>>>SET HIGHLIGHT: use ON, OFF, or 1-5 characters

>>>Term "TI" is not defined in one or more files

72 OXYRASE?/TI

248 OXYRASE?

77356 AZIDE?

S1 82 OXYRASE?/TI OR (OXYRASE? AND AZIDE?)

?rd

>>>Duplicate detection is not supported for File 657.

>>>Duplicate detection is not supported for File 672.

>>>Duplicate detection is not supported for File 673.

>>>Duplicate detection is not supported for File 226.

>>>Duplicate detection is not supported for File 349.

>>>Duplicate detection is not supported for File 654.

>>>Records from unsupported files will be retained in the RD set.

...examined 50 records (50)

...completed examining records

S2 70 RD (unique items)

?t s2/6,kwic/all

2/6,KWIC/1 (Item 1 from file: 155)

DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

15202226 22783676 PMID: 12902904

A simple method of producing low oxygen conditions with oxyrase for cultured cells exposed to radiation and tirapazamine.  
Aug 2003

A simple method of producing low oxygen conditions with oxyrase for cultured cells exposed to radiation and tirapazamine.

2/6,KWIC/2 (Item 2 from file: 155)

DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

10337673 96140003 PMID: 8554759

Evaluation of Oxyrase enrichment method for isolation of Campylobacter jejuni from inoculated foods.  
Dec 1995

Evaluation of Oxyrase enrichment method for isolation of Campylobacter jejuni from inoculated foods.

2/6,KWIC/3 (Item 3 from file: 155)

DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

10232952 96034262 PMID: 7577355

Enrichment in Fraser broth supplemented with catalase or Oxyrase , combined with the microcolony immunoblot technique, for detecting heat-injured Listeria monocytogenes in foods.  
Jul 1995

Enrichment in Fraser broth supplemented with catalase or Oxyrase , combined with the microcolony immunoblot technique, for detecting heat-injured *Listeria monocytogenes* in foods.

2/6,KWIC/4 (Item 4 from file: 155)  
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

09024843 20318563 PMID: 10860619

The enhancement of the ability of mouse sperm to survive freezing and thawing by the use of high concentrations of glycerol and the presence of an *Escherichia coli* membrane preparation ( Oxyrase ) to lower the oxygen concentration.

May 2000

... use of high concentrations of glycerol and the presence of an *Escherichia coli* membrane preparation ( Oxyrase ) to lower the oxygen concentration.

2/6,KWIC/5 (Item 5 from file: 155)  
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

08838292 20122412 PMID: 10655335

Evaluation of the oxyrase OxyPlate anaerobe incubation system.  
Feb 2000

Evaluation of the oxyrase OxyPlate anaerobe incubation system.

2/6,KWIC/6 (Item 6 from file: 155)  
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

08652189 95340783 PMID: 7615756

Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by oxyrase agar dilution and E test methodologies.

May 1995

Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by oxyrase agar dilution and E test methodologies.

2/6,KWIC/7 (Item 7 from file: 155)  
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

07708055 93163305 PMID: 8381817

Oxyrase , a method which avoids CO2 in the incubation atmosphere for anaerobic susceptibility testing of antibiotics affected by CO2.

Feb 1993

Oxyrase , a method which avoids CO2 in the incubation atmosphere for anaerobic susceptibility testing of antibiotics...

2/6,KWIC/8 (Item 1 from file: 358)  
DIALOG(R)File 358: (c) 2003 DECHEMA . All rts. reserv.

101949

Use of oxyrase enzyme ( Oxyrase ) for the detection of bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions.

PUBLICATION DATE: Jan 1998 (980101) / (19980101)

Use of oxyrase enzyme ( Oxyrase ) for the detection of bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions.

2/6,KWIC/9 (Item 1 from file: 357)



DIALOG(R)File 357:(c) 2003 Thomson Derwent & ISI. All rts. reserv.

0263402 DBR Accession No.: 2001-02978

Method for controlled reduction of nitroaromatic compounds comprises  
reacting nitroaromatic compound with organic non-aromatic reductant in  
the presence of redox enzyme - with use of the redox enzyme, oxyrase

2000

- with use of the redox enzyme, oxyrase

2/6,KWIC/10 (Item 1 from file: 657)

DIALOG(R)File 657:(c) 2003 Compu-Mark N.V. All rts. reserv.

\* TRADEMARK IMAGE AVAILABLE \*

OXYRASE et element figuratif (and design)

REGISTER: FRANCE

INTL CLASS: 1 (Produits chimiques/Chemicals)

2/6,KWIC/11 (Item 2 from file: 657)

DIALOG(R)File 657:(c) 2003 Compu-Mark N.V. All rts. reserv.

OXYRASE

REGISTER: FRANCE

INTL CLASS: 1 (Produits chimiques/Chemicals)

2/6,KWIC/12 (Item 1 from file: 672)

DIALOG(R)File 672:(c) 2003 Compu-Mark N.V. All rts. reserv.

OXYRASE

REGISTER: GERMANY

INTL CLASS: 1 (Chemische Erzeugnisse/Chemicals)

5 (Pharmazeutische erzeugnisse/Pharmaceuticals)

2/6,KWIC/13 (Item 2 from file: 672)

DIALOG(R)File 672:(c) 2003 Compu-Mark N.V. All rts. reserv.

\* TRADEMARK IMAGE AVAILABLE \*

OXYRASE und Bild (and design)

REGISTER: GERMANY

INTL CLASS: 1 (Chemische Erzeugnisse/Chemicals)

2/6,KWIC/14 (Item 1 from file: 673)

DIALOG(R)File 673:(c) 2003 Compu-Mark N.V. All rts. reserv.

\* TRADEMARK IMAGE AVAILABLE \*

OXYRASE e elemento figurativo (and design)

REGISTER: ITALY

INTL CLASS: 1 (Prodotti chimici/Chemicals)

2/6,KWIC/15 (Item 2 from file: 673)

DIALOG(R)File 673:(c) 2003 Compu-Mark N.V. All rts. reserv.

OXYRASE

REGISTER: ITALY

INTL CLASS: 1 (Prodotti chimici/Chemicals)

2/6,KWIC/16 (Item 1 from file: 226)

DIALOG(R)File 226:(c) 2003 Thomson & Thomson. All rts. reserv.

04474638 \* TRADEMARK IMAGE AVAILABLE \*

OXYRASE and Design

INTL CLASS: 1 (Chemicals)

2/6,KWIC/17 (Item 2 from file: 226)  
DIALOG(R)File 226:(c) 2003 Thomson & Thomson. All rts. reserv.

03762264

OXYRASE  
INTL CLASS: 1 (Chemicals)

2/6,KWIC/18 (Item 1 from file: 160)  
DIALOG(R)File 160:(c) 1999 The Gale Group. All rts. reserv.

02448994

Applied DNA Systems - Relationship With Oxyrase , Inc.  
May 12, 1989

Applied DNA Systems - Relationship With Oxyrase , Inc.

2/6,KWIC/19 (Item 2 from file: 160)  
DIALOG(R)File 160:(c) 1999 The Gale Group. All rts. reserv.

01966019

The OXYRASE (TM) Enzyme System is a novel biocatalyst that is capable of partially or completely removing dissolved oxygen in minutes.  
March, 1988

The OXYRASE (TM) Enzyme System is a novel biocatalyst that is capable of partially or completely removing...

2/6,KWIC/20 (Item 1 from file: 35)  
DIALOG(R)File 35:(c) 2003 ProQuest Info&Learning. All rts. reserv.

01400875 ORDER NO: AAD95-07235

DEVELOPMENT OF A SIMPLE, SENSITIVE, RAPID PROCEDURE FOR DETECTING  
HEAT-INJURED LISTERIA MONOCYTOGENES IN FOODS ( OXYRASE )  
Year: 1994

DEVELOPMENT OF A SIMPLE, SENSITIVE, RAPID PROCEDURE FOR DETECTING  
HEAT-INJURED LISTERIA MONOCYTOGENES IN FOODS ( OXYRASE )

2/6,KWIC/21 (Item 2 from file: 35)  
DIALOG(R)File 35:(c) 2003 ProQuest Info&Learning. All rts. reserv.

01328941 ORDER NO: AAD94-02721

CHARACTERISTICS OF FOOD GRADE MEMBRANE BOUND ENZYMES AND APPLICATIONS IN  
FOOD MICROBIOLOGY AND FOOD SAFETY ( OXYRASE , ESCHERICHIA COLI,  
GLUCONOBACTER OXYDANS, ACETOBACTER XYLINUM)  
Year: 1993

CHARACTERISTICS OF FOOD GRADE MEMBRANE BOUND ENZYMES AND APPLICATIONS IN  
FOOD MICROBIOLOGY AND FOOD SAFETY ( OXYRASE , ESCHERICHIA COLI,  
GLUCONOBACTER OXYDANS, ACETOBACTER XYLINUM)

2/6,KWIC/22 (Item 1 from file: 16)  
DIALOG(R)File 16:(c) 2003 The Gale Group. All rts. reserv.

05196524 Supplier Number: 47929286 (USE FORMAT 7 FOR FULLTEXT)  
Enzyme Makers Develop Oxyrase As Laundry Product Bleach Agent  
August 25, 1997  
Word Count: 290

Enzyme Makers Develop Oxyrase As Laundry Product Bleach Agent

2/6,KWIC/23 (Item 2 from file: 16)  
DIALOG(R)File 16:(c) 2003 The Gale Group. All rts. reserv.

01697401 Supplier Number: 42114507 (USE FORMAT 7 FOR FULLTEXT)  
Oxyrase patents antioxidant membrane method  
June, 1991  
Word Count: 143

Oxyrase patents antioxidant membrane method

2/6,KWIC/24 (Item 1 from file: 65)  
DIALOG(R)File 65:(c) 2003 BLDSC all rts. reserv. All rts. reserv.

03130449 INSIDE CONFERENCE ITEM ID: CN033180469  
**Susceptibility of Anaerobic Bacteria to Azithromycin Determined by Common Method and in Oxyrase System**

CONFERENCE: International conference on macrolides, azalides, streptogramins, and ketolides-4th (199801)

**Susceptibility of Anaerobic Bacteria to Azithromycin Determined by Common Method and in Oxyrase System**

2/6,KWIC/25 (Item 2 from file: 65)  
DIALOG(R)File 65:(c) 2003 BLDSC all rts. reserv. All rts. reserv.

00324782 INSIDE CONFERENCE ITEM ID: CN003058610  
**Novel methods to stimulate growth of food pathogens by oxyrase and related membrane fractions**  
CONFERENCE: Rapid methods and automation in microbiology and immunology-7th International congress (199300)

**Novel methods to stimulate growth of food pathogens by oxyrase and related membrane fractions**

2/6,KWIC/26 (Item 1 from file: 349)  
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

01037924  
**METHODS FOR STERILIZING TISSUE**  
**PROCEDES DE STERILISATION DE TISSUS**  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 30072  
Publication Year: 2003

Fulltext Availability:  
Detailed Description

Detailed Description  
... acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan, sodium capryl N-acetyl tryptophan, and methionine; **azides**, such as sodium **azide**; enzymes, such as Superoxide Dismutase (SOD), Catalase, and A4, A5 and A6 desaturases; uric acid...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with **Oxyrase** to provide an

2/6,KWIC/27 (Item 2 from file: 349)  
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

01011698  
**A MEDIUM COMPOSITION, METHOD AND DEVICE FOR SELECTIVELY ENHANCING THE ISOLATION OF ANAEROBIC MICROORGANISMS CONTAINED IN A MIXED SAMPLE WITH**

**FACULTATIVE MICROORGANISMS  
COMPOSITION DE MILIEU, PROCEDE ET DISPOSITIF PERMETTANT D'AUGMENTER DE  
MANIERE SELECTIVE L'ISOLEMENT DE MICRO-ORGANISMES ANAEROBIES CONTENUS  
DANS UN ECHANTILLON MELANGE PRESENTANT DES MICRO-ORGANISMES FACULTATIFS**

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 11288

Publication Year: 2003

Patent Applicant/Assignee:

**OXYRASE INC...**

Fulltext Availability:

Detailed Description

Claims

English Abstract

...The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $N^{sub}3^{sup}-$ ), cyanide ( $CN^{sup}-$ ) or related compounds. These inhibitors are present in...

Detailed Description

... anaerobes. New approaches, such as use of biocatalytic oxygen reducing agents, see for example the **Oxyrase** ' microbiological products and processes, (U.S. Patent Nos.

41476,224; 41996,073; 5,240,853...

...as OxyDish TM, (U.S. Patent Nos. 5,830,746 and 5,955,344) of **Oxyrase** , Inc., Mansfield, Ohio (the assignee of the present invention), have simplified and reduced costs for...medium composition comprises a nutrient medium, an oxygen reducing agent (preferably, biocatalytic) and a cyanide, **azide** , and/or other related inhibitor compounds. These compounds act by chemically, irreversibly bonding to key...

Claim

... The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $N;$ ), cyanide ( $CN-$  ) or related compounds. These inhibitors are present in an ...steps:  
a. providing a medium composition comprising a nutrient medium and a salt of an **azide** , wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...medium composition

anaerobically;

d. comparing growth in the medium composition, with partial growth with the **azide** being indicative that an anaerobe is present; and,

e. sampling the medium composition containing the **azide** for further characterization and isolation of the anaerobe organism. In a further aspect, the invention...as salts or buffers, liquid or solid, and an effective concentration of a salt of

**azide** ; and,

b. a means for creating an anaerobic environment for the medium composition.

In a...the same.

Figure 1 is a photograph showing the growth of *C. perfringens* at various **azide** concentrations.

Figure 2 is a photograph showing the growth of *P. levii* at various **azide** concentrations.

Figure 3 is a photograph showing the growth of *E. coli* at various **azide** concentrations.

Figure 4 is a photograph showing the growth of *P. mirabilis* at various **azide** concentrations.

Figure 5 is a photograph comparing the growth of *B. fragilis* on culture  
7

plates containing ("AnaSelect OxyPlateTMII) or lacking ("Brucella OxyPlateTMII) **azide** .

Figure 6 is a photograph comparing the growth of *C. perfringens* on culture plates containing ("AnaSelect OxyPlate TM") or lacking ("Brucella OxyPlate TM ") **azide** .

Figure 7 is a photograph comparing the growth of *P. levii* on culture plates containing ("AnaSelect OxyPlate TM") or lacking ("Brucella OxyPlate TM") **azide** .

Figure 8 is a photograph comparing the growth of *D. anaerobius* on culture plates containing ("AnaSelect OxyPlate TM") or lacking ("Brucella OxyPlate TM") **azide** .

Figure 9 is a photograph comparing the growth of *F. nucleatum* on culture plates containing ("AnaSelect OxyPlate TM .") or lacking ("Brucella OxyPlate TM") **azide** .

is Figure 10 is a photograph comparing the growth of *E. co#* on culture plates containing ("AnaSelect OxyPlate TIP) or lacking ("Brucella OxyPlate TIIII) **azide** .

Figure 11 is a photograph showing a growth of the anaerobe *B. fragifis* along with...

...and *P. mirabilis* in culture plates containing ("AnaSelect OxyPlate TM") or lacking ("Brucella OxyPlate TM") **azide** . Figure 12 is a photograph showing a growth of the anaerobe *P. anaerobius* along with...

...and *P. mirabilis* in culture plates containing ("AnaSelect OxyPlate TM") or lacking ("Brucella OxyPlate TM") **azide** .

Figure 13 is a photograph showing a growth of the anaerobe *P. levff*  
8

along...*P. mirabilis* in culture plates containing ("AnaSelect OxyPlate TM 11) or lacking ("Brucella OxyPlate TM") **azide** . Figure 14 is a photograph showing a growth of the anaerobe *F. nucleatum* along with...

...*P. mirabilis* in culture plates containing ("AnaSelect OxyPlate TM 11) or lacking ("Brucella OxyPlate TM") **azide** . Figure 15 is a photograph showing a growth of the anaerobe *C. perfringens* along with...

...*P. mirabilis* in culture plates containing ("AnaSelect OxyPlate TM11) or lacking ("Brucella I 0 OXyplateT11") **azide** .

Detailed Description of the Preferred Embodiments of the ...fragments), and an inhibitor of the respiratory electron transport system, such as a salt of **azide** , cyanide or like compounds. It was found that the inclusion of an inhibitor (or ...unaffected.

9

This discovery was then applied to biocatalytic oxygen reducing agents such as the **Oxyrase** microbiological products. However, the inventors were not optimistic about the outcome since the essence of...of the respiratory enzymes used in the oxygen scavenging membrane fragments found in the commercial **Oxyrasee** products. Unexpectedly, the inventors found that isolated respiratory enzymes bound to a membrane were resistant...

...containing biocatalytic oxygen reducing agents such as the oxygen scavenging membrane fragments found in the **Oxyraseo** microbial products. Further the inventors found that even though growth of the facultative ...may be made anaerobic through the use of biocatalytic oxygen reducing agents such as the **Oxyrasee** enzyme system available from **Oxyrase** , Inc. of Mansfield, Ohio. In this regard, "**Oxyrase** for Agar" is a filtered enzyme additive used to produce anaerobic conditions in a wide variety of bacteriological agar medium. Similarly, "**Oxyrase** ' for Broth" is an enzyme additive used to produce anaerobic environments in bacteriological broth medium...invention without departing from the spirit and scope thereof.

A. Comparison of Broth Cultures with **Azide**

An initial test was done to determine if anaerobes would grow at **azide** concentrations that inhibited common facultative microbes. **Azide** (N@-)

is an inhibitor of the electron transport system where it prevents the reduction of In this test, sodium **azide** was added to 5 ml Brain Heart Infusion ("BHI") broth tubes at a final concentration of 0.1 mg/ml. **Oxyrase** for Broth consists of sterile membrane fragments obtained from *Escherichia coli*. To each tube

19

was added **Oxyrase** for Broth to create an anaerobic environment. The tubes were then inoculated with stock cultures...sample was removed from each tube and streaked onto a Brucella OxyPlateT, devoid of any **azide** which was incubated for three days at 37'C before recording the results (See Table 1).

Table 1

Growth of Selected Anaerobes and Facultative Microbes in Broth Containing **Azide**

Culture Observation OxyPlateT

Un-inoculated Control No Turbidity

Anaerobe microbes

*Bacteriodes fragilis* .... *Bifidobacterium adelocentis*...*mirabilis* No Turbidity ...

20

This preliminary experiment showed that at 0.1 mg/ml of **azide** in anoxic broth, most anaerobes grow whereas two commonly encountered facultative microbes did not grow. Furthermore, the results show that the **azide** did not

inhibit the enzyme system found in **Oxyrase** that was used to create the anaerobic environment. Also, even though visible growth was not...

anaerobius on the plate in contrast to the obvious growth, albeit low, in the tube. **Azide** was bacteriostatic for the facultative microbes. Even though they did not grow in the presence of **azide** in anoxic broth, they retained their viability as determined by the numerous colonies on a plate inoculated with a sample from these tubes.

B. Assays of **Oxyrase** with **Azide**

The preliminary experiment describe above had several unexpected outcomes. One was the sensitivity of *Escherichia coli* to **azide** while the

**Oxyrase** Enzyme System, which is obtained from *E. coli*, is insensitive to the same amount of **azide**. The inventors then set out to determine the affect of

**azide** on the **Oxyrase** Enzyme System. Three concentrations of **azide** (1.0

mg/ml, 0.1 mg/ml, and 0.01 mg/ml) were tested for its affect on **Oxyrase** activity as measured polarographically with a Gilson Oxygraph. This instrument measures dissolved oxygen concentration and records it with time. Standard

conditions used to measure **Oxyrase** activity were chosen. An amount of **Oxyrase** was mixed with the stated concentrations of sodium **azide** in tubes and incubated at 37°C for up to 90 minutes. Samples were ...taken at 0 time,

21

minutes and 90 minutes of incubation. The activity of the **Oxyrase** was determined with the Gilson Oxygraph and the results expressed in **Oxyrase** units (See Table 2).

Table 2

**Oxyrase** Activity at Various Concentrations of **Azide**

Time ----- **Oxyrase** Activity -----

----- **Azide** Concentration -----

1.0 mg/ml 0.1 mg/ml 0.01 mg/ml

0 min...

...90 min 115 Wm[ 115 u/ml 115 U/Ml

These results clearly show that **Oxyrase** activity is resistant to at least 10X the concentration of **azide** that inhibits growth of cells of *E. coli* under anaerobic conditions. Growth in anoxic broth was inhibited by 0.1 mg/ml of

**azide**, and possibly less. These results show that the **OxyraseP** Enzyme System can be used to generate anaerobic conditions in the presence of high concentrations of **azide** without any apparent effect on the activity of the enzyme system of the biocatalytic oxygen reducing agent of **OxyraseP**.

C. Effectiveness of **Azide** in Agar Plated Media for Preferentially Inhibiting Facultative Microbes  
Isolation and purification of microorganisms is...that lies at the heart of the  
22  
science of microbiology. The inventors found that **azide** could be used in  
anoxic broth to preferentially inhibit facultative microbes.  
Subsequently, the inventors sought...

...on solid agar medium.

A series of test OxyPlateSTM were made containing Brucella medium with **Oxyrase** and different concentrations of sodium **azide** (0.01 mg/ml, 0. ...are presented in Table 3.

Table 3

Growth of Select Anaerobe and Facultative Microbes on **Azide** Containing OxyPlateTm  
Growth on **Azide** OxyPlate'rm

**Azide** Concentration > 0 0.01 0.02 0.04  
mg/ml mg/ml mg/ml mg that **azide** in agar with an anoxic environment produced by the oxygen scavenging membrane fragments has little...

...plate with P.

mirabilis. The inventors noted that under anoxic conditions and at concentrations of **azide** above 0.1 mg/ml and when P. mirabilis is diluted to isolated colonies, swarming is inhibited. This effect of **azide** provides an ...isolation of anaerobes in the presence of P. mirabilis.

D. Observations on the Effect of **Azide** Concentration on Broth Cultures

The inventors next set out to determine the range of **azide** concentrations that are effective in anaerobic broth culture. Brain Heart Infusion (BHI) broth medium was prepared by adding **azide** at different concentrations. Oxygen scavenging membrane fragments, i.e. **Oxyrase** ' for Broth, was added to each tube prior to inoculation to reduce the environment  
and...370C before the following observations were made (See Table 4).

24

Table 4

Effect of **Azide** Concentration of Broth Cultures  
**Azide** Concentration

Culture 0 mg/ml 0.01 0.02 0.04  
mg/ml mg/mlThe results showed that the anaerobe microbes grow in the presence  
of **azide** whereas the facultatives are inhibited by **azide** under anaerobic  
conditions. As the concentration of **azide** is increased, growth of some anaerobes are slightly affected, but less than that of the...  
...tube).

. Samples of the above cultures were plated on Brucella OxyPlate TM devoid of any **azide** . Even though the level of growth of F. nucleatum and P. anaerobius was below visible...

...in visible growth. One of the facultative microbes, Proteus

25

mirabilis is more tolerant of **azide** than is Escherichia coli in anoxic broth, but it is unable to grow at the higher levels of **azide** . Plating of the facultative  
microbes results in numerous colonies which shows that most cells retain viability even though their growth is limited in anoxic broth. These results show that **azide** in broth and anoxia provides an advantage for the growth of  
the anaerobe microbe over...

...facultative microbe and that this  
advantage can be optimized by selecting an effective concentration of **azide** .

#### E. Comparison of OxyPlate™ Cultures with and without Azide

A concentration of azide (0.025 mg/ml) was chosen to make Brucella OxyPlate™. A drop of stock culture was streaked onto a control plate, lacking azide, and onto a plate containing azide, designated AnaSelect™. The plates were incubated at 37°C for three days and the photographs...cofi (Figure 10).

Examination of the photographs show that growth for anaerobe microbes on the azide containing plate was very similar to that on the control plate without the azide. In contrast, growth for the facultative E. coli on the

azide containing plate under anaerobic conditions was greatly limited compared to the control plate. A similar...Facultative Microbes

The results show that growth of anaerobe microbes is unaffected by concentrations of azide that limit the growth of facultative microbes. The inventors then set out to determine if...OxyPlate™ (control) and onto an AnaSelect™ (Brucella medium with 0.025 mg/ml of azide) OxyPlate™. The plates were incubated two or three days and photographed. The photograph...perfringens are found (marker b). These results clearly show that under anoxic conditions, plates containing azide have a very practical application for separating and isolating anaerobe microbes from mixtures containing superior numbers of facultative microbes. This can not be done on anoxic plates without azide.

#### G. Method for Rapidly Recognizing, Isolating, and Identifying Anaerobe Microbe in Mixed Culture with Facultative...

...Isolation of anaerobes from mixed broth cultures fails for this reason. The ability of azide to preferentially favor the growth of an anaerobe microbe over that of a facultative microbe...of the facultative microbe by cultivation in anoxic, broth containing oxygen scavenging membrane fragments and azide. At this point sufficient enrichment has occurred to make identification possible through microscopic observation of plating the broth culture onto a plate containing azide and incubating that plate anaerobically. The combination of broth enrichment and isolation on a plate, under the selective affects of azide and anoxic growth, provide a powerful method to obtain the anaerobe from a mixed culture...being facultative microbes.

30

To tubes containing 5.0 ml of BHI broth were added Oxyraseo for Broth (1 drop per ml of medium) which creates and maintains an anaerobic environment...

...0.1 mg/ml, 0.2 mg/ml and 0.4 mg/ml with sodium azide.

Each tube was inoculated with 0.1 ml of the mixed suspension of microbes. The...inoculated tubes were incubated at 37°C for 48 hours. Observations: Control tubes, not containing azide, were heavily turbid throughout the broth from the bottom of the tube to the top of the broth. Tubes containing azide had varying degrees of turbidity starting at the bottom, of the tube and extending upward, but not to the top of, the broth. Generally, growth in the azide containing tube was greater at the

lowest concentration of azide and less as the concentration of azide increased. Growth of the mixed cells was limited (selective) in the tubes containing azide.

The tubes were mixed and a sample streaked onto blood agar OxyPlate™, one containing 0.025 mg/ml azide. The plate without azide is identified as Control. The plate containing azide is identified as AnaSelect™. The plates were incubated at 37°C for three days before...

...that was added to the mix. Only the observations from the culture tube containing the azide are recorded below. The tube containing the lowest concentration of azide that successfully separated

the anaerobe was reported below. The results from the culture tube not containing azide were uniformly the same. The colonies on the plates were E. coli and P. mirabilis...cultures.

2 Mixed cultures of facultative microbes with anaerobe microbes grown



in broth anaerobically with **azide** yield isolated, identifiable colonies of the target anaerobe. It is apparent by observation that growth...From other experiments, the inventors knew that the growth of anaerobe microbes is unaffected by **azide** ; whereas, growth of facultative microbes is limited by **azide**

33

. The facultative microbes put into the selective environment of **azide** and anoxia is at a growth disadvantage relative to the anaerobe microbe, but the facultative...

...above Observations). Growth of the anaerobe microbe in broth under the favorable, select conditions with **azide** amplify their number, but under the conditions of this experiment where the initial number of...Thioglycollate broth tubes to Standard Thioglycollate tubes AnaSelect" Thioglycollate broth tubes contained the poison sodium **azide** as describe in this invention. They were made by adding oxygen scavenging enzyme fragments, i.e. **Oxyrasee** for Broth, containing sodium **azide** to ...in the routine procedure for analyzing patient specimens in a clinical laboratory. Thioglycollate tubes containing **Oxyrase** ' for Broth were incubated aerobically because the **Oxyrase** creates and maintains an anaerobic environment within the tubes. The same specimens were inoculated into...the results are reported in Table 5.

36

Table 5

Results Comparing Standard Thioglycollate to **Oxyrase** AnaSelectTm Thioglycollate Standard Thio AnaSelect"I Thio I Gram neg rod (aerobic) negative 2 Staphylococcus...that contains facultative microorganisms, wherein said medium composition comprises a nutrient medium, a salt of **azide** , wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...of anaerobe microorganisms.

2 The medium composition of claim 1 , wherein the amount of the **azide** ranges from about 0.1 mg/ml to 1.0 mg/ml in broth medium.

3 The medium composition of claim 1, wherein the amount of the **azide** ranges ...steps:

a. providing a medium composition comprising a nutrient medium and a salt of an **azide** , wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not growth with the **azide** being indicative that an anaerobe is present; and, e. sampling the medium composition containing the **azide** for further characterization and isolation of the anaerobe organism.

46

. A device for the transport...

...as salts or buffers, liquid or solid, and an effective concentration of a salt of **azide** ; and, b. a means for creating an anaerobic environment for the medium composition.

10 A...medium composition of claim 10, wherein the inhibitor of the electron transport system comprises an **azide** or cyanide.

17 The medium composition of claim 10, wherein the inhibitor of the electron transport system comprises a salt of an **azide** or a cyanide.

18 The medium composition of claim 10, wherein the inhibitor of the

electron transport system is sodium **azide** .

19 The medium composition of claim 10, wherein the microbiological  
48 nutrient medium comprises Brain...of claim 20, wherein the inhibitor of  
the electron transport system comprises a salt of **azide** or cyanide.

23 The medium composition of claim 20, wherein the inhibitor is  
sodium **azide** .

24 The medium composition of claim 20, wherein the inhibitor of the  
electron transport system...

...membrane fragments  
derived from the cytoplasmic membranes of Escherichia coff, and a salt of  
an **azide** .

26 The medium composition of claim 25, wherein the salt of an **azide**  
is ...microbes comprising a base medium, a biocatalytic oxygen reducing  
agent and a salt of an **azide** .

28 A method for the selective growth and isolation of an anaerobe  
from a mixed...a nutrient medium composition containing a  
biocatalytic oxygen reducing agent and a salt of an **azide** in an amount  
sufficient to limit the growth of facultative microorganisms while not  
inhibiting  
the...bacteria is Escherichia coff.

35 The method of claim 31, wherein the salt of an **azide** is sodium  
**azide** .  
52

2/6,KWIC/28 (Item 3 from file: 349)  
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

00466435 \*\*Image available\*\*

**STABILIZED COMPOSITIONS OF CARDIAC MARKERS**  
**COMPOSITIONS STABILISEES DE MARQUEURS CARDIAQUES**

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 8493

Publication Year: 1998

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... Dade International Inc.

Figure 3A and 3B show the stability of Myoglobin  
with and without **Oxyrase** @ material. Data was  
obtained using a Stratus@ II Fluorometric  
Analyzer, available from Dade International Inc.  
Figure 3A shows Myoglobin Stability without  
**Oxyrase** (predicted stability at 4C = 100 days).

Figure 3B shows Myoglobin Stability with **Oxyrase**  
(predicted stability at 4C>1000 days).

Figure 4 shows the effect of **Oxyrase** @ material on  
the recovery of CK-MB after a freeze-thaw cycle.

Figure 5A shows...368-379  
(1987).

One such biocatalytic oxygen-reducing agent, prepared from e. coli is EC **Oxyrase** @ oxygen reducing agent available from **Oxyrase** , Inc. The cell extract is filtered to obtain a suspension of 0.2 microns or...

...S. 5,240,853.

SUBSTITUTE SHEET (RULE 26)

It has been found that preferentially the **Oxyrase** @ material should be treated to remove extraneous cellular contaminants. Most preferably the **Oxyrase**0 material is treated with gelatin using a preferential fractionation method. In this method an aqueous solution containing 0.05% to 0.15% gelatin and 5-10 units/mL **Oxyrase** @ material is prepared. At gelatin concentrations over 0.25%, the **Oxyrase** @ material loses its activity. The **Oxyrase**0 material/gelatin solution is filtered through successively smaller pore size filters, for example 8 micron...

...is preferred that the filters have low protein binding so as not to bind the **Oxyrase** (D material and/or the gelatin.

In addition, a substrate for the **Oxyrase** @ material is added to act as a hydrogen donor for the **Oxyrase** (D material. Typical substrates are lactic acid, succinic acid, formic acid, and alpha glycerol phosphate...prior art at the concentrations found in the prior art such as gentamycin, clortrimazole, sodium **azide** , mycostatin, thimerasol, Kathon and/or Proclin 300.

The solution may be degassed and should be...prior art at the concentrations found in the prior art such as gentamycin, clortrimazole, sodium **azide** , mycostatin, thimerosal, Kathon and/or Proclin 300

In addition, stabilizing proteins such as...stabilization as discussed above. That is -

anoxia is maintained by degassing the matrix, adding the **Oxyrase** (D material and/or by adding other oxygen scavengers. Preferentially the means for maintaining anoxia are achieved by degassing and by including **Oxyrase** @ material into the solution. More preferentially the **Oxyrase** @ material is treated to remove extraneous cellular contaminants. Most preferably the **Oxyrase** @ material is treated with gelatin using a preferential fractionation method. In this method an aqueous...

...gelatin and 5-10 units/mL is prepared. At gelatin concentrations over 0.25%, the **Oxyrase** @ material loses its activity. The **Oxyrase** @ material/gelatin solution is filtered through successively smaller pore size filters, for example 8 micron...

...filters have low protein

SUBSTITUTE SHEET (RULE 26)

binding so as not to bind the **Oxyrase** @ material and/or the gelatin. Figure 3 demonstrates the stability of myoglobin in the base material with and without **Oxyrase** @ material.

In addition, a substrate for the **Oxyrase** @ material is added to act as a hydrogen donor for the **Oxyrase** @ material. Typical substrates are lactic acid, succinic acid, formic acid, and alpha glyceryl phosphate and...

...prior art at the concentrations found in the prior art such as gentamycin, clotrimazole, sodium **azide**, mycostatin, thimerosal, Kathon and/or Proclin 300.

Serum may be included if desired, but in...amounts ranging from 0-1000 ng/mL.

It has been found that the addition of **Oxyrase** @ material provides additional stability to CK-MB if the control material is stored frozen and...

...or argon gas.

#### SUBSTITUTE SHEET (RULE 26)

After the solution is degassed, an amount of **Oxyrase** @ material sufficient to provide about 0.3 units of activity per mL is added under an inert atmosphere such as nitrogen or argon gas. The added **Oxyrase** @ material is preferably purified to remove extraneous cellular contaminants. Most preferably the **Oxyrase** @ material is treated with gelatin using a preferential fractionation method prior to addition to the...

...of gelatin in

800 mLs of water by heating. After cooling, about 200 mL of **OxyraseO** material at about 30 units/mL is added. Thus, the resulting solution has about 6 units/mL of **Oxyrase** activity. The **Oxyrase** @ material is separated from the liquid by filtration, although centrifugation or other means of separation work as well. Then the purified **Oxyrase** @ is added to the base material to provide about 0.3 units/mL of activity...of oxygen (e.g. under helium, nitrogen or argon) until used. In addition, gelatin-treated **Oxyrase** @ detailed in Example 1 is added in the absence of oxygen after the degassing process to provide a  
SUBSTITUTE SHEET (RULE 26)

final activity of **OxyraseS** material of about 0.3 units/mL.

Troponin I stock solution as described in Example...

#### Claim

... and an oxygen scavenger.

8 The composition of claim 7 wherein the oxygen scavenger is **Oxyrase** @ material.  
SUBSTITUTE SHEET (RULE 26)

9 A composition for use in clinical assays for troponin...

00361237

**NITROIMIDAZOLE ANTIBACTERIAL COMPOUNDS AND METHODS OF USE THEREOF**  
**COMPOSES ANTIBACTERIENS DE NITRO-IMIDAZOLE ET LEURS PROCEDES D'UTILISATION**

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 20803

Publication Year: 1997

Fulltext Availability:

Detailed Description

Detailed Description

... TEF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and **diphenylphosphorylazide** in toluene at 70 to 150°C to give an isocyanate intermediate. Reaction of an...

...p-toluenesulfonyl chloride in pyridine. The intermediate sulfonate 4 (R<sub>3</sub>=pCH<sub>3</sub>C<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>) is reacted with sodium **azide**. The resulting **azide** is reduced with 1,3-propanediol and triethyl amine to give amine 23. Referring now...group with concomitant cyclization to give the cyclic tosylate 31b. Reaction of 31b with sodium **azide** and reduction (1,3-propanediol, triethylamine) gave the amine 31d in good yield. Synthesis of...2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1 eq.), diphenylphosphoryl **azide** (1 eq.) in toluene is heated at 80°C for 4 h, cooled and t...Third edition.

National Committee for Clinical Laboratory Standards, Villanova, PA) except for the following modification: **Oxyrase** enzyme (**Oxyrase** Inc., Mansfield, OH) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, KS) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S.K. et al. " **Oxyrase** , a method which avoids CO<sub>2</sub> in the incubation atmosphere for anaerobic susceptibility testing of antibiotics...

...S.K. et al., "Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by **Oxyrase** agar dilution and E-test methodologies," J Clin. Microbiol. 33:1366-1367 (1995)). Thus, the...

...the CO<sub>2</sub>, H<sub>2</sub> and N<sub>2</sub>. enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need of such equipment and provided a mechanism of avoiding...

...J Clin. Microbiol. Infect. Dis., 10:834-842 (1991)). This problem was eliminated by using **Oxyrase** , since this enzyme removed O<sub>2</sub> rapidly converting it to H<sub>2</sub>O without toxic intermediates. Quality control anaerobic microorganisms (Bacteroides thetaiotamicrons ATCC 29741; Eubacterium lentum ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...27 mmol) of the tosylate prepared above and 100 mg (1.53 mmol) of sodium **azide** in 5 mL dry DMSO was heated in an oil bath (65°C) for h...

...and the solvent evaporated. The residue was recrystallized from ethyl acetate/hexane to give the **azide** as light yellow needles: mp 157.5°C (dec.); [α]<sub>D</sub><sup>25</sup> (DW, c=1.0...15 ml screw cap plastic tubes, and oxygen was removed by addition of 40 g/l **Oxyrase** For Broth (**Oxyrase** , Inc., Mansfield, OH).

After 24 h incubation at 37°C, the compounds listed in Table...

2/6,KWIC/30 (Item 1 from file: 10)

DIALOG(R)File 10:(c) format only 2003 The Dialog Corporation. All rts. reserv.

3095054 91031183 Holding Library: AGL

Effect of oxyrase enzyme on *Listeria monocytogenes* and other facultative anaerobes

1991

Effect of oxyrase enzyme on *Listeria monocytogenes* and other facultative anaerobes

2/6,KWIC/31 (Item 2 from file: 10)

DIALOG(R)File 10:(c) format only 2003 The Dialog Corporation. All rts. reserv.

3095053 91031182 Holding Library: AGL

Oxyrase enzyme and motility enrichment Fung-Yu tube for rapid detection of *Listeria monocytogenes* and *Listeria* species

1991

Oxyrase enzyme and motility enrichment Fung-Yu tube for rapid detection of *Listeria monocytogenes* and *Listeria*...

2/6,KWIC/32 (Item 1 from file: 654)

DIALOG(R)File 654:(c) Format only 2003 The Dialog Corp. All rts. reserv.

0005385841 \*\*IMAGE Available

Methods for sterilizing tissue

Fulltext Word Count: 35876

Number of Claims: 122

Exemplary or Independent Claim Number(s):

1,2,3,4,54,55,88,93,102,107,108,109,110

Number of Drawing Sheets: 48

Number of Figures: 48

Description of the Invention:

...acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan, sodium capryl N-acetyl tryptophan, and methionine; azides, such as sodium azide; enzymes, such as Superoxide Dismutase (SOD), Catalase, and [capital Delta, Greek]4, [capital Delta, Greek] ...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with Oxyrase to provide an anaerobic environment. Serial ten-fold dilutions were made to a dilution of...

2/6,KWIC/33 (Item 2 from file: 654)

DIALOG(R)File 654:(c) Format only 2003 The Dialog Corp. All rts. reserv.

0005376507 \*\*IMAGE Available

Methods for sterilizing tissue

Fulltext Word Count: 41387

Number of Claims: 145

Exemplary or Independent Claim Number(s):

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17,19,20,21,22,23,24,25,26,27,28,29,30,32,33,35,37,39,40,41,42,43,44,45,46,47,48,49,50,51,52,54,56,58,87,91,92,93,94,95,96,97,98,99,100,101,105,109,110,111,112,113,116,120,124,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145

Number of Drawing Sheets: 54

Number of Figures: 54

Description of the Invention:

...acid, histidine, N-acetylcysteine (NAC), glutamic acid, tryptophan, sodium capryl N-acetyl tryptophan, and methionine; azides, such as sodium azide; enzymes, such as Superoxide Dismutase (SOD), Catalase, and [capital Delta, Greek]4, [capital Delta, Greek] ...of the vials were then resuspended in 10 mL of Reinforced Clostridial Medium supplemented with Oxyrase to provide an anaerobic environment. Serial ten-fold dilutions were made to a dilution of...

0005305261 \*\*IMAGE Available

**Medium composition, method and device for selectively enhancing the isolation of anaerobic microorganisms contained in a mixed sample with facultative microorganisms**

Fulltext Word Count: 12721

Number of Claims: 35

Exemplary or Independent Claim Number(s): 1,8,9,10,20,25,27,28,31

Number of Drawing Sheets: 15

Number of Figures: 15

**Abstract:**

...The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $\text{N}[\text{sub}]{3}[\text{sup}]^{-}$ ), cyanide ( $\text{CN}[\text{sup}]^{-}$ ) or related compounds. These inhibitors are present in...

**Summary of the Invention:**

...anaerobes. New approaches, such as use of biocatalytic oxygen reducing agents, see for example the **Oxyrase** (R) microbiological products and processes, (U.S. Pat. Nos. 4,476,224; 4,996,073...as OxyDish(TM), (U.S. Pat. Nos. 5,830,746 and 5,955,344) of **Oxyrase**, Inc., Mansfield, Ohio (the assignee of the present invention), have simplified and reduced costs for...medium composition comprises a nutrient medium, an oxygen reducing agent (preferably, biocatalytic) and a cyanide, **azide**, and/or other related inhibitor compounds. These compounds act by chemically, irreversibly bonding to key...The medium contains an inhibitor of the electron transport system, such as a salt of **azide** ( $\text{N}[\text{sub}]{3}[\text{sup}]^{-}$ ), cyanide ( $\text{CN}[\text{sup}]^{-}$ ) or related compounds. These inhibitors are present in...0017] a. providing a medium composition comprising a nutrient medium and a salt of an **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...0020] d. comparing growth in the medium composition, with partial growth with the **azide** being indicative that an anaerobe is present; and...

...0021] e. sampling the medium composition containing the **azide** for further characterization and isolation of the anaerobe organism of a salt of **azide**; and...

**Description of the Drawings:**

...0033]FIG. 1 is a photograph showing the growth of *C. perfringens* at various **azide** concentrations...

...0034]FIG. 2 is a photograph showing the growth of *P. levii* at various **azide** concentrations

**Description of the Invention:**

...fragments), and an inhibitor of the respiratory electron transport system, such as a salt of **azide**, cyanide or like compounds

**Exemplary or Independent Claim(s):**

...that contains facultative microorganisms, wherein said medium composition comprises a nutrient medium, a salt of **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...steps: a. providing a medium composition comprising a nutrient medium and a salt of an **azide**, wherein the **azide** is present in an amount sufficient to limit the growth of facultative microorganisms while not...

...medium composition anaerobically; d. comparing growth in the medium composition, with partial growth with the **azide** being indicative that an anaerobe is present; and, e. sampling the medium composition containing the **azide** for further characterization and isolation of

the anaerobe organism...as salts or buffers, liquid or solid, and an effective concentration of a salt of **azide** ; and, b. a means for creating an anaerobic environment for the medium composition... membrane fragments derived from the cytoplasmic membranes of Escherichia coli and a salt of an **azide** .

...

...microbes comprising a base medium, a biocatalytic oxygen reducing agent and a salt of an **azide** .

...a nutrient medium composition containing a biocatalytic oxygen reducing agent and a salt of an **azide** in an amount sufficient to limit the growth of facultative microorganisms while not inhibiting the...

Non-exemplary or Dependent Claim(s):

2. The medium composition of claim 1, wherein the amount of the **azide** ranges from about 0.1 mg/ml to 1.0 mg/ml in broth medium...

...3. The medium composition of claim 1, wherein the amount of the **azide** ranges from about 0.01 mg/ml to 1.0 mg/ml in agar medium...medium composition of claim 10, wherein the inhibitor of the electron transport system comprises an **azide** or cyanide a salt of an **azide** or a cyanide...

...medium composition of claim 10, wherein the inhibitor of the electron transport system is sodium **azide** .

...

...of claim 20, wherein the inhibitor of the electron transport system comprises a salt of **azide** or ...23. The medium composition of claim 20, wherein the inhibitor is sodium **azide** .

...

...26. The medium composition of claim 25, wherein the salt of an **azide** is present in an amount sufficient to limit the growth of the facultative microbes but...35. The method of claim 31, wherein the salt of an **azide** is sodium **azide** .

2/6,KWIC/35 (Item 4 from file: 654)

DIALOG(R)File 654:(c) Format only 2003 The Dialog Corp. All rts. reserv.

4348272

Derwent Accession: 2000-498205

Utility

C/ Nitro-[2,1-b]imidazopyran compounds and antibacterial uses thereof ; BACTERICIDES TREATING PATHOGENIC INFECTIONS OF MYCOBACTERIA, CLOSTRIDIUM, CRYPTOSPORIDIUM OR HELICOBACTER AND MULTIDRUG-RESISTANT TUBERCULOSIS

Fulltext Word Count: 20176

Number of Claims: 7

Exemplary or Independent Claim Number(s): 1

Number of Drawing Sheets: 5

Number of Figures: 5

Number of US cited patent references: 1

Description of the Invention:

...THF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and **diphenylphosphorylazide** in toluene at 70 to 150[degree(s)] C. to give an isocyanate intermediate. Reaction...sub]3 C[sub]6 H[sub]4 SO[sub]2) is reacted with sodium **azide** . The resulting **azide** is reduced with 1,3-propanediol and triethyl amine to give amine 23...group with concomitant cyclization to give the cyclic tosylate 31b. Reaction of 31b with sodium **azide** and reduction (1,3-propanediol, triethylamine) gave the amine 31d in good yield. Synthesis of... 2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1 eq.), diphenylphosphoryl **azide** (1 eq.) in toluene is heated at 80[degree(s)] C. for 4 h, cooled...Third edition. National Committee: for Clinical Laboratory Standards, Villanova, Pa.) except for the following



modification: **Oxyrase** (R) enzyme ( **Oxyrase** Inc., Mansfield, Ohio) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, Kans.) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S. K. et al. " **Oxyrase** , a method which avoids CO<sub>2</sub> in the incubation atmosphere for anaerobic susceptibility testing...

...S. K. et al., "Susceptibilities of 201 anaerobes to erythromycin, azithromycin, clarithromycin, and roxithromycin by **Oxyrase** agar dilution and E-test methodologies," J. Clin. Microbiol. 33:1366-1367 (1995)). Thus, the...

...2 and N<sub>2</sub>- enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need of such equipment and provided a mechanism of avoiding...J. Clin. Microbiol. Infect. Dis., 10:834-842 (1991)). This problem was eliminated by using **Oxyrase** , since this enzyme removed O<sub>2</sub> rapidly converting it to H<sub>2</sub> O...

...Quality control anaerobic microorganisms (*Bacteroides thetaiotamicrons* ATCC 29741; *Eubacterium lentum* ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...27 mmol) of the tosylate prepared above and 100 mg (1.53 mmol) of sodium **azide** in 5 mL dry DMSO was heated in an oil bath (65[degree(s)] C...and the solvent evaporated. The residue was recrystallized from ethyl acetate/hexane to give the **azide** as light yellow needles: mp 157.5[degree(s)] C. (dec.); [[alpha]][sup]25 D...ml screw-cap plastic tubes, and oxygen was removed by addition of 40 [mu]l **Oxyrase** For Broth ( **Oxyrase** , Inc., Mansfield, Ohio). After 24 h incubation at 37[degree(s)] C., the compounds listed...

2/6,KWIC/36 (Item 5 from file: 654)  
DIALOG(R)File 654:(c) Format only 2003 The Dialog Corp. All rts. reserv.

3887342

Derwent Accession: 1997-100154

#### Utility

C/ Nitroimidazole antibacterial compounds and methods of use thereof  
; MYCOBACTERIUM TUBERCULOSIS, CLOSTRIDIUM

Fulltext Word Count: 12597

Number of Claims: 15

Exemplary or Independent Claim Number(s): 1

Number of Drawing Sheets: 5

Number of Figures: 5

Number of US cited patent references: 2

Number of non-patent cited references: 32

#### Description of the Invention:

...THF, dioxane and the like. The resulting carboxylic acid 22 is reacted with triethylamine and **diphenylphosphorylazide** in toluene at 70[degree(s)] to 150[degree(s)] C. to give an isocyanate...  
2H-3,4-dihydro-[2-1b]imidazopyran (Example 21, 1 eq.), triethylamine (1 eq.), diphenylphosphoryl **azide** (1 eq.) in toluene is heated at 80[degree(s)] C. for 4 h, cooled...

...Third edition. National Committee for Clinical Laboratory Standards, Villanova, Pa.) except for the following modification: **Oxyrase** (R) enzyme ( **Oxyrase** Inc., Mansfield, Ohio) was incorporated in Wilkins-Chalgren broth (Remel, Lenexa, Kans.) to produce anaerobic conditions and preclude any requirement for anaerobic atmosphere incubation (Spangler, S. K. et al. " **Oxyrase** , a method which avoids CO<sub>2</sub> in the incubation atmosphere for anaerobic susceptibility testing by **Oxyrase** agar dilution and E-test methodologies," J. Clin. Microbiol. 33:1366-1367 (1995)). Thus, the...

...2 and N<sub>2</sub> - enriched atmosphere normally present in anaerobic chambers and jars. The **Oxyrase** both dilution method precluded the need

of such equipment and provided a mechanism of avoiding...

...J. Clin. Microbiol. Infect. Dis. 10:834-842 (1991)). This problem is eliminated by using **Oxyrase**, since this enzyme removed O<sub>2</sub> rapidly converting it to H<sub>2</sub> O...

...Quality control anaerobic microorganisms (*Bacteroides thetaiotamicrons* ATCC 29741; *Eubacterium lentum* ATCC 43055) were tested in **Oxyrase** broth microdilution against clindamycin, metronidazole, mezlocillin, and vancomycin for quality assurance. Results were accepted when...

2/6,KWIC/37 (Item 6 from file: 654)  
DIALOG(R)File 654:(c) Format only 2003 The Dialog Corp. All rts. reserv.

3599420

Derwent Accession: 1992-150897

Utility

C/ Assay for motile facultative anaerobic pathogens  
; INCUBATING IN MEDIUM CONTAINING GROWTH RATE ENHANCING AMOUNT OF OXYRASE  
ENZYME

Fulltext Word Count: 3112

Number of Claims: 3

Exemplary or Independent Claim Number(s): 1

Number of Drawing Sheets: 5

Number of Figures: 8

Number of US cited patent references: 2

Number of non-patent cited references: 5

2/6,KWIC/38 (Item 1 from file: 73)  
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

11385102 EMBASE No: 2001399376

Oxyrase cell-membrane preparations simplify cultivation of anaerobic  
bacteria  
2000

Oxyrase cell-membrane preparations simplify cultivation of anaerobic  
bacteria

2/6,KWIC/39 (Item 2 from file: 73)  
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

07169989 EMBASE No: 1998059736

Use of oxyrase enzyme ( Oxyrase (R)) for the detection of  
bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions  
20 FEB 1998

Use of oxyrase enzyme ( Oxyrase (R)) for the detection of  
bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions

2/6,KWIC/40 (Item 3 from file: 73)  
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

07142453 EMBASE No: 1998023699

Evaluation of supplementation of Oxoid Anaerobe Basal Broth with Oxyrase  
(R)  
1997

Evaluation of supplementation of Oxoid Anaerobe Basal Broth with Oxyrase  
(R)

2/6,KWIC/41 (Item 4 from file: 73)  
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

06340432 EMBASE No: 1995370045

Evaluation of Oxyrase (R) enrichment method for isolation of  
Campylobacter jejuni from inoculated foods  
1995

Evaluation of Oxyrase (R) enrichment method for isolation of  
Campylobacter jejuni from inoculated foods

2/6,KWIC/42 (Item 5 from file: 73)

DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

06207613 EMBASE No: 1995244023

Enrichment in Fraser broth supplemented with catalase or Oxyrase (R),  
combined with the microbiology immunoblot technique, for detecting  
heat-injured Listeria monocytogenes in foods  
1995

Enrichment in Fraser broth supplemented with catalase or Oxyrase (R),  
combined with the microbiology immunoblot technique, for detecting  
heat-injured Listeria monocytogenes in foods

2/6,KWIC/43 (Item 6 from file: 73)

DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

05260580 EMBASE No: 1993028665

Oxyrase , a method which avoids COinf 2 in the incubation atmosphere for  
anaerobic susceptibility testing of antibiotics affected by COinf 2  
1993

Oxyrase , a method which avoids COinf 2 in the incubation atmosphere for  
anaerobic susceptibility testing of...

2/6,KWIC/44 (Item 1 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

13956342 BIOSIS NO.: 200200585163

Use of Oxyrase Enzyme System in the MIC assessment of antimicrobial  
agents against obligate anaerobic oral bacteria.  
2002

Use of Oxyrase Enzyme System in the MIC assessment of antimicrobial  
agents against obligate anaerobic oral bacteria.

2/6,KWIC/45 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

13739643 BIOSIS NO.: 200200368464

NADH oxidase-mediated production of superoxide in the renal thick ascending  
limb in response to hypoxia.  
2002

...ABSTRACT: 0.05), which was substantially blocked by an inhibitor of NADH  
oxidase, diphenyleneiodonium chloride (DPI). Oxyrase , an enzyme mixture  
that consumed or depleted oxygen in the incubation solution,  
significantly increased intracellular...

...by DPI. Moreover, chemical hypoxia due to blockade of oxygen-dependent  
tubular metabolism by sodium azide also activated NADH oxidase to  
produce O2.- within TALH cells. Based on these results, we...

2/6,KWIC/46 (Item 3 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

12639946 BIOSIS NO.: 200000393448

Evaluation of Oxyrase -containing media for isolation of *Campylobacter jejuni* from inoculated ground beef and chicken skin.  
2000

Evaluation of Oxyrase -containing media for isolation of *Campylobacter jejuni* from inoculated ground beef and chicken skin.

2/6,KWIC/47 (Item 4 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

12479800 BIOSIS NO.: 200000233302

A comparison study between Oxyrase anaerobic agar plates and conventional anaerobic method for the enumeration of lactic acid and bifidobacteria from fermented milk.

1999

A comparison study between Oxyrase anaerobic agar plates and conventional anaerobic method for the enumeration of lactic acid and bifidobacteria...

2/6,KWIC/48 (Item 5 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

12048028 BIOSIS NO.: 199900328547

Effect of medium volume on the growth of *Campylobacter jejuni* in Oxyrase (R)-containing broth.

1999

Effect of medium volume on the growth of *Campylobacter jejuni* in Oxyrase (R)-containing broth.

2/6,KWIC/49 (Item 6 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

11636118 BIOSIS NO.: 199800417850

Effect of Oxyrase on the recovery of bifidobacteria from untreated waste water.

1998

Effect of Oxyrase on the recovery of bifidobacteria from untreated waste water.

2/6,KWIC/50 (Item 7 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

11406925 BIOSIS NO.: 199800188257

Use of oxyrase enzyme ( Oxyrase ) for the detection of bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions.

1998

Use of oxyrase enzyme ( Oxyrase ) for the detection of bacteriophages of *Bacteroides fragilis* in aerobic incubating conditions.

2/6,KWIC/51 (Item 8 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

11328063 BIOSIS NO.: 199800109395

Effects on motility and aster formation of mouse spermatozoa from a reduction in oxygen concentration by oxyrase , an *Escherichia coli* membrane preparation.

1997

...on motility and aster formation of mouse spermatozoa from a reduction in oxygen concentration by oxyrase , an *Escherichia coli* membrane

preparation.

2/6,KWIC/52 (Item 9 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

10962220 BIOSIS NO.: 199799583365  
Recovery and toxin production of Clostridium botulinum in Oxyrase  
supplemented culture media.  
1997

Recovery and toxin production of Clostridium botulinum in Oxyrase  
supplemented culture media.

2/6,KWIC/53 (Item 10 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

10361758 BIOSIS NO.: 199698816676  
Effect of supplemented ferrioxamine E and oxyrase on the growth of  
foodborne pathogen.  
1996

Effect of supplemented ferrioxamine E and oxyrase on the growth of  
foodborne pathogen.

2/6,KWIC/54 (Item 11 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

10359947 BIOSIS NO.: 199698814865  
Evaluation of in-vitro activity of novel compounds against selected  
anaerobes using oxyrase -supplemented broth in a microdilution format.  
1996

Evaluation of in-vitro activity of novel compounds against selected  
anaerobes using oxyrase -supplemented broth in a microdilution format.

2/6,KWIC/55 (Item 12 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

10359853 BIOSIS NO.: 199698814771  
A comparison study between Oxyrase anaerobic agar plates and conventional  
anaerobic glove chamber for the isolation and identification of anaerobic  
bacteria from clinical wound infections.  
1996

A comparison study between Oxyrase anaerobic agar plates and conventional  
anaerobic glove chamber for the isolation and identification of anaerobic  
...

2/6,KWIC/56 (Item 13 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09849077 BIOSIS NO.: 199598303995  
Influence of oxyrase on the microdilution susceptibility testing of B.  
fragilis to five antimicrobials.  
1995

Influence of oxyrase on the microdilution susceptibility testing of B.  
fragilis to five antimicrobials.

2/6,KWIC/57 (Item 14 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09430914 BIOSIS NO.: 199497439284

Aerobic microtiter MIC testing of anaerobes using oxyrase : A multicenter study.

1993

Aerobic microtiter MIC testing of anaerobes using oxyrase : A multicenter study.

2/6,KWIC/58 (Item 15 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09430894 BIOSIS NO.: 199497439264  
Susceptibility of 119 anaerobes to erythromycin, azithromycin, clarithromycin and roxithromycin by the oxyrase method.  
1993

Susceptibility of 119 anaerobes to erythromycin, azithromycin, clarithromycin and roxithromycin by the oxyrase method.

2/6,KWIC/59 (Item 16 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09336781 BIOSIS NO.: 199497345151  
Effect of Oxyrase enzyme on the growth of Bacteroides fragilis and Clostridium perfringens under aerobic incubation.  
1994

Effect of Oxyrase enzyme on the growth of Bacteroides fragilis and Clostridium perfringens under aerobic incubation.

2/6,KWIC/60 (Item 17 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09336771 BIOSIS NO.: 199497345141  
The effect of Oxyrase on the metabolic processes of lactic acid bacteria.  
1994

The effect of Oxyrase on the metabolic processes of lactic acid bacteria.

2/6,KWIC/61 (Item 18 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09336769 BIOSIS NO.: 199497345139  
Oxybase-TM enrichment broth supplemented with the enzyme oxyrase -TM for detection of campylobacter species in shellfish.  
1994

Oxybase-TM enrichment broth supplemented with the enzyme oxyrase -TM for detection of campylobacter species in shellfish.

2/6,KWIC/62 (Item 19 from file: 5)  
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

09336768 BIOSIS NO.: 199497345138  
Use of universal preenrichment medium supplemented with oxyrase for the simultaneous recovery of Escherichia coli O157:H7 and Yersinia enterocolitica.  
1994

Use of universal preenrichment medium supplemented with oxyrase for the simultaneous recovery of Escherichia coli O157:H7 and Yersinia enterocolitica.

2/6,KWIC/63 (Item 20 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

08808749 BIOSIS NO.: 199395098100

Oxyrase , a method which avoids carbon dioxide in the incubation atmosphere for anaerobic susceptibility testing of antibiotics affected by carbon dioxide.

1993

Oxyrase , a method which avoids carbon dioxide in the incubation atmosphere for anaerobic susceptibility testing of...

2/6,KWIC/64 (Item 21 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

08630243 BIOSIS NO.: 199345048318

Practical application of Brucella oxyrase enrichment procedure and its comparison with Doyle and Roman enrichment procedure.

1993

Practical application of Brucella oxyrase enrichment procedure and its comparison with Doyle and Roman enrichment procedure.

2/6,KWIC/65 (Item 22 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

08301660 BIOSIS NO.: 000043056658

OXYRASE SUPPLEMENTED MEDIA FOR BROTH DILUTION MIC TESTING OF ANAEROBES

1992

OXYRASE SUPPLEMENTED MEDIA FOR BROTH DILUTION MIC TESTING OF ANAEROBES

2/6,KWIC/66 (Item 23 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

08281075 BIOSIS NO.: 000043047148

IN-VITRO ACTIVITY OF AZITHROMYCIN AGAINST ANAEROBES USING THE MICRODILUTION TECHNIQUE WITH OXYRASE SUPPLEMENTED BROTH

1992

IN-VITRO ACTIVITY OF AZITHROMYCIN AGAINST ANAEROBES USING THE MICRODILUTION TECHNIQUE WITH OXYRASE SUPPLEMENTED BROTH

2/6,KWIC/67 (Item 24 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

08149978 BIOSIS NO.: 000042119401

EFFECTS OF OXYRASE OX-INDUCED ANOXIA ON CELLULAR ADENINE NUCLEOTIDES AN

1992

EFFECTS OF OXYRASE OX-INDUCED ANOXIA ON CELLULAR ADENINE NUCLEOTIDES AN

2/6,KWIC/68 (Item 25 from file: 5)

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07765588 BIOSIS NO.: 000041063839

OXYRASE ENZYME AND MOTILITY ENRICHMENT FUNG-YU TUBE PROCEDURE FOR RAPID DETECTION OF LISTERIA-MONOCYTOGENES AND LISTERIA-SPP

1991

OXYRASE ENZYME AND MOTILITY ENRICHMENT FUNG-YU TUBE PROCEDURE FOR RAPID DETECTION OF LISTERIA-MONOCYTOGENES AND...

2/6,KWIC/69 (Item 26 from file: 5)

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07125982 BIOSIS NO.: 000039062676

OXYRASE AS A SUPPLEMENT TO ANAEROBIC SUSCEPTIBILITY TESTING MEDIUM  
1990

OXYRASE AS A SUPPLEMENT TO ANAEROBIC SUSCEPTIBILITY TESTING MEDIUM

2/6,KWIC/70 (Item 27 from file: 5)

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07113931 BIOSIS NO.: 000039050625

SUBSTITUTION OF THE ANAEROBIC CHAMBER WITH OXYRASE FOR THE GROWTH OF  
TREPONEMA-DENTICOLA

1990

SUBSTITUTION OF THE ANAEROBIC CHAMBER WITH OXYRASE FOR THE GROWTH OF  
TREPONEMA-DENTICOLA

?logoff hold

07oct03 08:59:16 User228206 Session D2062.3  
\$0.24 0.075 DialUnits File155  
\$0.35 7 Type(s) in Format 95 (KWIC)  
\$0.35 7 Types  
\$0.59 Estimated cost File155  
\$0.07 0.020 DialUnits File358  
\$0.00 1 Type(s) in Format 95 (KWIC)  
\$0.00 1 Types  
\$0.07 Estimated cost File358  
\$0.39 0.022 DialUnits File357  
\$0.25 1 Type(s) in Format 95 (KWIC)  
\$0.25 1 Types  
\$0.64 Estimated cost File357  
\$0.22 0.039 DialUnits File657  
\$3.00 2 Type(s) in Format 6  
\$3.00 2 Types  
\$3.22 Estimated cost File657  
\$0.19 0.035 DialUnits File672  
\$3.00 2 Type(s) in Format 6  
\$3.00 2 Types  
\$3.19 Estimated cost File672  
\$0.14 0.026 DialUnits File673  
\$3.00 2 Type(s) in Format 6  
\$3.00 2 Types  
\$3.14 Estimated cost File673  
\$0.17 0.031 DialUnits File226  
\$3.00 2 Type(s) in Format 6  
\$3.00 2 Types  
\$3.17 Estimated cost File226  
\$0.12 0.022 DialUnits File160  
\$0.52 2 Type(s) in Format 95 (KWIC)  
\$0.52 2 Types  
\$0.64 Estimated cost File160  
\$0.11 0.026 DialUnits File35  
\$0.20 2 Type(s) in Format 95 (KWIC)  
\$0.20 2 Types  
\$0.31 Estimated cost File35  
\$0.14 0.026 DialUnits File16  
\$0.52 2 Type(s) in Format 95 (KWIC)  
\$0.52 2 Types  
\$0.66 Estimated cost File16  
\$0.11 0.028 DialUnits File65  
\$0.00 2 Type(s) in Format 95 (KWIC)  
\$0.00 2 Types  
\$0.11 Estimated cost File65  
\$0.88 0.186 DialUnits File349  
\$1.00 4 Type(s) in Format 6  
\$1.00 4 Types  
\$1.88 Estimated cost File349



	\$0.07	0.024 DialUnits	File10
	\$0.00	2 Type(s) in Format 95 (KWIC)	
	\$0.00	2 Types	
\$0.07		Estimated cost	File10
	\$1.67	0.283 DialUnits	File654
	\$1.50	6 Type(s) in Format 6	
	\$1.50	6 Types	
\$3.17		Estimated cost	File654
	\$0.65	0.070 DialUnits	File73
	\$1.80	6 Type(s) in Format 95 (KWIC)	
	\$1.80	6 Types	
\$2.45		Estimated cost	File73
	\$0.94	0.169 DialUnits	File5
	\$4.32	27 Type(s) in Format 95 (KWIC)	
	\$4.32	27 Types	
\$5.26		Estimated cost	File5
		OneSearch, 16 files,	1.083 DialUnits FileOS
\$0.22		TELNET	
\$28.79		Estimated cost this search	
\$33.37		Estimated total session cost	3.168 DialUnits